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## INTERNATIONAL

### MURDOCH'S STEPPING DOWN IS NOT ENOUGH TO RESTORE THE PUBLIC'S TRUST IN MEDIA

Some powerful media outlets are viewing Rupert Murdoch's announcement on September 21 — that the 92-year-old is stepping down as chairman of Fox Corporation and News Corp, the television and newspaper empires he has built up over more than 70 years — with scepticism. For instance, the Economist has asserted that “Rupert Murdoch isn't going anywhere just yet” and the magazine is of the firm opinion that as “chairman emeritus” he will still wield plenty of clout. While we are not sure of the future trajectory, we need to assess his role as a media mogul seriously.

There are many defining scholarly works that help understand the far-reaching impact of Reaganomics and Thatcherism in the world of political economy. The impact created by Rupert Murdoch, with his global expansion in the information milieu, is similar to that of the Anglo-American impact of the early 1980s. Mr. Murdoch led the expansion of the media market at the cost of its credibility, trust and impact. The democratic deficits we face today have a direct relationship to the undermining of the editorial independence of free media. Many fail to understand the relationship between credible information and a vibrant democracy. What happens when we reduce news media to just an industry devoid of its socio-political obligations? Mr. Murdoch was at the forefront of reducing news media to just a business enterprise and yet his far-reaching influence has not been properly studied.

### IS UKRAINE'S COUNTEROFFENSIVE WORKING?

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

Ukraine, which launched a counteroffensive against the invading Russian troops with advanced western weapons and NATO-trained soldiers in June, has made incremental territorial gains, but is yet to clinch a major breakthrough. Three months later, as the offensive grinds on, the Ukrainians have said that they would continue fighting to reclaim the land lost to the Russians and have asked for more military aid from the West. The U.S. and its allies seem willing to provide more assistance, but there is scepticism on whether Ukraine would meet its military objectives.

#### **What was Ukraine's original plan?**

Ukraine had prepared for months before it launched the counteroffensive in June. In the preceding months, its Western allies had supplied highly advanced weapons, including Patriot missile defence systems, HIMAR and MLRS rockets, Stryker and Bradley armoured vehicles, Challenger and Leopard 2 main battle tanks and Storm Shadow long-range cruise missiles, besides artillery shells and ammunition. The plan, as leaked U.S. classified documents show, was to conduct a classic blitzkrieg — a lightning operation with an armoured strike force piercing through Russia's lines of defence, capturing territories and delivering a blow to the Russian positions in eastern and southern Ukraine.

Kyiv opened three axes in its counteroffensive — Orikhiv in the south (in Zaporizhzhia); Velyka Novosilka in the Zaporizhzhia-Donetsk border area in the middle of the frontline and Bakhmut in Donetsk (east). The main objective was to reach Melitopol and the Sea of Azov to cut off Russia's “land bridge” from the mainland to Crimea — the Black Sea peninsula it annexed in 2014 through



a controversial referendum — and gain territories in the east. If Russia loses Melitopol, it would put pressure on its hold on Crimea, disrupt its supply lines and allow the Ukrainians to target Berdyansk and Mariupol further north.

#### **What happened to the strategy?**

Ukraine's plan to take a quick victory against Russian forces was doomed to fail from the very beginning, wrote John Mearsheimer, American international relations scholar. He said that there were 11 blitzkrieg operations since modern tanks arrived on the battlefield and in most cases, the attacker with substantially higher capabilities against the defender tasted victory, what he calls an "unfair fight". In the case of Ukraine, Russia had built three lines of defences along the frontline with trenches, landmines, heavy weapons and other fortifications. The prolonged battle for Bakhmut (which culminated in the Russians taking the city in May) pinned down thousands of Ukrainian troops in the eastern city, while providing more time to the Russians to build their defences. Ukraine, which is reliant on old Soviet-style fighter jets, also lacked advanced air cover, which is imperative for any blitzkrieg operation.

So, when Ukraine finally launched the counteroffensive, its troops jumped straight into the traps laid by Russia. According to a report in The New York Times, Ukraine lost some 20% of the weaponry it got from the West in the first two weeks of the counteroffensive. As Ukraine realised that the blitzkrieg was not working, it changed its tactics from attempting for a major thrust into the Russian defences to small operations targeting the rear of Russia's military machine, while employing long-range fire to attack the enemy's supply lines. This allowed Ukraine to take some small villages along the frontline, but breaching the Russian defences remains a distant goal.

#### **How did Russia slow down Ukrainian advances?**

In the initial phase of the war, Russia made a lot of mistakes. Its plan was to capture territories quickly and hold them with a limited number of forces (some 1,90,000 troops were mobilised for the invasion). But when the Ukrainians resisted, denying a quick victory to Russia, it both exposed Moscow's weakness and opened new avenues for the West to step in. Last year, Russia was forced out of Kharkiv by a swift Ukrainian advance; and later on, Moscow decided to pull back its troops from the western bank of Dnipro in Kherson. Since then, Russia has changed its focus from offensive operations to defence, its traditional forte. Vladimir Putin, the Russian President, ordered a partial mobilisation, drafting some 3,00,000 men, who the Russians hoped would solve the manpower shortage that plagued their initial thrust into Ukraine.

Since the Kherson pullout, Russia's territorial advances were limited to Donetsk — it took Soledar in January and Bakhmut in May, in operations mostly involving the Wagner private military company. Besides trenches filled with explosives and miles-deep trip-wired or booby-trapped mines, Russian troops also used the ISDM Zemledeliye mine-laying system that spread mines from rockets at a rapid pace. On the frontline, Russia used this tactic, according to Ukrainian officers, to rapidly re-mine cleared areas, often trapping advancing Ukrainian troops within circles of minefields.

In the early stage of the war, Russia lost dozens of its fighter jets; now, analysts note, the Russian Air Force remains intact, though it still lacks air superiority. They also use precision guided bombs, released from low altitude jets or attack helicopters, targeting positions well beyond Ukraine's defence lines. They have also deployed attack helicopters, anti-tank missiles and artillery on the frontline, which made advances extremely difficult for the Ukrainian troops. As Ukraine makes



slow progress on the battlefield, it also gives the Russians time to refortify the defence lines or re-mine the cleared areas.

#### **What has been the West's response?**

The U.S. intelligence agencies had expressed their scepticism about the counteroffensive well before it was launched. In February, leaked U.S. intelligence documents showed the bleak assessment of the counteroffensive by Washington. According to documents, labelled as "top secret", U.S. agencies had assessed that Ukraine's operation would result "only in modest territorial gains" and could fall "well short" of its goals. The U.S., which has supplied military aid worth \$40 billion to Ukraine since the war began, seemed to have realised weeks into the counteroffensive that things were not looking good for Ukraine. In early July, the Biden administration announced that it would send cluster munitions to Ukraine, which have been banned by over 100 countries for the indiscriminate harm they cause to civilians. As Ukraine's offensive went on with meagre results, questions started rising from allies about its tactics. According to a Financial Times report, U.S. officials say Ukraine was "risk-averse" and failed to execute an effective campaign, combining infantry, artillery and air power. Ukrainian soldiers challenged the U.S. criticism asking when was the last time American troops fought a conventional war with an equal force on the battlefield.

Gen. Mark A. Milley, Chairman of the Joint Chiefs of Staff said in a recent interview that the U.S. has been clear about the challenges before Ukraine. "I had said a couple of months ago that this offensive was going to be long, it's going to be bloody, it's going to be slow," he said. "And that's exactly what it is: long, bloody and slow, and it's a very, very difficult fight." A latest U.S. intelligence assessment stated that the counteroffensive would fail to reach Melitopol, a key Ukrainian goal, according to a report in Washington Post that cited unnamed American officials.

But these difficulties do not mean that the U.S. is having a rethink in its approach. Last week, President Joe Biden decided to send long-range army tactical missile systems (ATACMS) to Ukraine, which would allow Kyiv to target Russian positions well beyond the frontline. U.S.-supplied Abrams main battle tanks are set to enter the battlefield soon, according to the Pentagon. President Biden is also seeking an additional \$24 billion in aid for Ukraine.

#### **Where does it leave Russia?**

The U.S. had a twin approach towards Russia's invasion. One was to arm Ukraine to beat Russia in the battlefield and the other was to weaken Russia through economic sanctions. This approach has had mixed results. The way Russia is withstanding Ukraine's counteroffensive suggests that Moscow has learnt from its early mistakes and is adapting itself rapidly to new battlefield realities. Russia also came up with ways to work around sanctions and export controls so that its defence production would not be affected.

If Russia could make 100 tanks a year before the war, now they are manufacturing 200, according to a recent NYT report. Russia is also on track to make two million artillery shells a year, twice the number of shells it produced before the war, according to the report. But at the same time, sanctions have affected Russia's economy in general. Russia has also taken huge casualties. According to U.S. estimates, Russia's military has suffered greatly with more than 2,70,000 killed or wounded.



Besides, in recent months, Ukraine has also taken the war to Crimea, the Black Sea and even to Moscow through drones and missiles. Particularly in the Black Sea, Russia's fleet, which is based off Crimea, comes under repeated Ukrainian attacks.

The prolonged war in Europe has contributed to an erosion of Russian power in its periphery, particularly in the Caucasus (where Azerbaijan dismantled a Russia-mediated ceasefire and took over the disputed Nagorno-Karabakh territory using force). Russia has also helplessly witnessed NATO expanding further towards its border after it launched the Ukraine war. However, despite these setbacks, Mr. Putin seems determined to continue fighting a war of attrition, while Ukraine is trying to escape attrition with quick battlefield gains. In either scenario, peace remains a distant idea.

## WAR IN THE CAUCASUS

Azerbaijan's brisk military recapture of Nagorno-Karabakh, an Armenian-populated enclave within its borders, shows the changing power dynamics in the Caucasus, where American, Russian and Turkish interests collide. The roots of the conflict go back to the final days of the Soviet Union when the enclave's majority Armenian-Christian population held a referendum to break away from the Shia majority Azerbaijan. Nagorno-Karabakh was then run by Armenian separatists, backed by the Republic of Armenia, until recently. In 2020, Azerbaijan, backed by Turkey, fought Armenia, a Russian treaty ally, and captured much of Nagorno-Karabakh. The Russians then did little to help Armenia, but brokered a ceasefire that left Stepanakert, Nagorno-Karabakh's biggest city, in the hands of the locals. The peace did not hold. Azerbaijan blockaded the Lachin Corridor, the main road connecting Nagorno-Karabakh to Armenia, leaving the 1,20,000 population of the enclave to face mounting economic miseries. Facing international criticism for the blockade, Azerbaijan promised to lift it, but established a checkpoint, continuing to control the flow of goods and medicines. Last week, it attacked Stepanakert, forcing the separatists to hand over full control to Baku.

In effect, Azerbaijan achieved in a day what it had failed to do in three decades. Two major geopolitical shifts seem to have helped Baku. First, Turkey, keen to play a bigger role in the Caucasus region, the former periphery of the Ottoman Turks, threw its weight behind Azerbaijan, with political and military support. Second, Russia's Ukraine invasion, which tied Moscow to its western front, has led to a substantial erosion of Russian power in the Caucasus. Armenia had often expressed displeasure with Russia's lack of action. Moscow did nothing besides issuing statements when Azerbaijan gradually dismantled the ceasefire agreement. Baku realised that the geopolitical situation favoured it and then moved in to take over the enclave. It is widely recognised that Nagorno-Karabakh is a part of Azerbaijan. But there is a history of mistrust and violence. Armenians in the region, having gone through a genocide and several conflicts, have a sharp historical memory and remain wary of any change in the status quo. Azerbaijan's takeover has triggered a massive refugee outflow to Armenia. There are already allegations that Baku is committing genocidal crimes. For Azerbaijan, this can be an opportunity to integrate Nagorno-Karabakh without further bloodshed. But for that, Baku should ensure equal rights for the Armenian population and respect its autonomy. If not, Azerbaijan could face prolonged local resistance, which could not only deny it a clean victory but also turn its quest to control the enclave ugly.



## TYCOON'S POLITICAL PLUNGE

Terry Gou is hoping to do a Donald Trump. As Taiwan heads to the polls in January 2024 for an election that carries enormous political significance for the island's future amid increasing tensions with China, the 72-year-old billionaire founder of Foxconn, the electronics manufacturing giant, jumped into the fray last month.

Mr. Gou's pitch to Taiwanese voters, in some respects, is not very different from what Mr. Trump put forth in 2016: promising economic competence that, he argues, only he can provide leveraging his considerable business experience. "I am the only entrepreneur with the practical management skills," he declared when announcing his run on August 28. "I am an entrepreneur with nearly five decades of practical experience. Who else is better suited to lead Taiwan's political sphere?"

Taking a shot at President Tsai Ing-wen and the ruling Democratic Progressive Party (DPP), whose candidate Lai Ching-te remains the frontrunner in the polls by some distance, Mr. Gou has blamed the current government for bringing the economy to "the edge of a cliff" and for not handling relations with China better. "I will not allow Taiwan to become the next Ukraine," he said, promising to bring "50 years of peace".

### **But will Taiwanese voters buy the pitch?**

Mr. Gou was born in 1950 in a small town outside Taipei, and his parents, as was the case for many Taiwanese of his generation, had lived in the Chinese mainland before the civil war. His father fought for the Kuomintang (KMT) and fled along with Chiang Kai-shek to Taiwan after their defeat to the Communist Party in 1949.

At the age of 24, he founded the Hon Hai Technology Group, which is today the world's biggest electronics manufacturer and is, of course, more widely known as Foxconn.

In 1988, he opened his first factory on the mainland in Shenzhen. The following decade saw a watershed moment for Foxconn as it bagged a major contract with Compaq. Other orders would follow with companies such as IBM and Apple. Foxconn's stunning rise coincided with China's emergence as a lynchpin in global supply chains, giving Mr. Gou's company a global footprint.

## TROUBLED WATERS

The move by the Philippines to remove a 300-metre floating barrier installed by China near the disputed Scarborough Shoal in the South China Sea and Beijing's warning to Manila asking it "not to stir up trouble" underscore how delicate the situation is in one of the world's busiest waters. Tensions were high between China, which claims much of the South China Sea, including areas away from its coast, and a more assertive Philippines in recent months. Manila has repeatedly accused Beijing of blocking its shipping vessels in and around the Scarborough Shoal, a triangular reef encircling a resource-rich lagoon that China seized from the Philippines in 2012. When the Philippines realised that China's forces were setting up a barrier blocking Filipino fishermen from getting closer to the reef — it was fully accessible until 2012 — President Ferdinand Marcos Jr. ordered its removal at the risk of inflaming tensions with Beijing. The Philippines sent Coast Guard crew in a boat to the Shoal, who dived and cut the rope that anchored the buoy line. Malaysia and Indonesia, which also have disputes with China, have sent vessels to the disputed waters for survey at various times this year. Manila's action underscores the trend of smaller countries in the



region trying to be more assertive in their maritime claims as China tightens its hold over the South China Sea.

Under Rodrigo Duterte, the former President, the Philippines tried to play down its tensions with China, even though Manila got a favourable ruling from an international tribunal in 2016 over Beijing's claims in the South China Sea. However, Mr. Marcos Jr., who assumed office in June last year, has taken a different approach. His administration has named and shamed China's high-handedness even as it has strengthened defence and strategic ties with Washington, its former colonial master. In February, the countries announced a defence cooperation agreement, which provides the U.S. access to nine Philippine bases, from the previous five. In April, the Philippines hosted its largest joint military exercises with the U.S. Enhanced cooperation with the U.S., with assurances from Washington that the mutual defence treaty "extends to Philippine public vessels, aircraft, armed forces and the Coast Guard", seems to have emboldened Manila in its disputes with Beijing. But such actions carry risks, which could lead to tensions spiralling out of control. The U.S. and its Pacific allies might get dragged into a conflict between China and the Philippines, potentially turning the South China Sea into a battle theatre, which is in nobody's interest. Both China and the Philippines should be mindful of the risks that their actions pose to the world and be ready to engage in talks and establish guardrails, ensuring stability in their volatile relationship.

## PAKISTAN BOMB BLAST: WHY BALUCHISTAN REMAINS A PROBLEM PROVINCE FOR THE COUNTRY

A suicide attack in Mastung district of Pakistan's restive Baluchistan province on Friday killed at least 53 and injured over 70 others.

No one has immediately claimed responsibility for the bombing, though the Tehreek-e-Taliban (TTP) were quick to distance themselves from it. This is the deadliest terror attack in Pakistan since 2018, when a suicide bombing in the same district killed 149.

Baluchistan, the largest Pakistani province, is sparsely populated and impoverished when compared to the rest of the country. At the same time, its location as well as abundance of natural resources, especially oil, make it strategically vital for Pakistan.

The province has been the site of a series of bloody insurgencies, brutal state repression, and an enduring Baloch nationalist movement since 1948.

### A 'forced' accession

At the time of independence, the region comprised Makran, Las Bela, Kharan and Kalat, the tribal chiefs of which had sworn allegiance to the British. The chief of Kalat was the most powerful chief, with the rest owing feudal allegiance to him.

As British withdrawal from the subcontinent drew closer, Ahmed Yar Khan, the last chief of Kalat, began openly advocating for an independent Baloch state. He hoped that his personal friendship with Muhammad Ali Jinnah would help him secure his own state rather than accede to Pakistan. And on August 11, 1947, his vision seemed to fructify when Pakistan signed a treaty of friendship with him — instead of forcing him to accede.

However, the British, wary of Russian expansionism in the region, were vehemently against this, wanting Kalat's accession to Pakistan instead. What further complicated matters was that the



three feudatories of Kalat all wanted to accede to Pakistan. Thus, by October 1947, Pakistan changed its tune and began pushing for accession.

Things finally came to a head when on March 17, 1948, the Pakistan government decided to accept the accession of Kalat's three feudatory states, leaving Kalat landlocked and with less than half its landmass. Moreover, rumour broke on the All India Radio that Khan actually wanted to accede to India. This prompted the Pakistan Army to move into Balochistan on March 26, 1948. The chief signed the treaty of accession a day later.

### **A violent conflict**

The ink on the accession treaty had not fully dried when protests broke out. In July that year, Khan's brother, Prince Abdul Karim rebelled against the accession agreement, starting the first of five Baloch "wars of independence" — fought in 1948, 1958–59, 1962–63 and 1973–1977, and currently ongoing since 2003.

These insurgencies have been brutally dealt with by Pakistani forces, who have been accused of committing numerous atrocities. There have been reports of abductions, torture, arbitrary arrests and executions levelled at the forces. An Amnesty International report from 2011 spoke about Pakistani forces' 'kill and dump' strategies, wherein personnel — often in uniform — pick up activists, teachers, journalists and lawyers, torture them for information, then shoot them and dump their bodies.

While it is hard to put an exact number to casualties afflicted on Baloch nationalists and innocent civilians, even conservative estimates put it at tens of thousands since 1948. According to NGO Voice for Baloch Missing Persons, around 5,228 Baloch people have gone missing just in the period between 2001 and 2017.

However, Baloch nationalist groups and insurgents have themselves been accused of human rights violations, including the attempted ethnic cleansing of non-Baloch people living in the region.

In recent years, Baloch nationalist organisations such as Balochistan Liberation Front and Balochistan Liberation Army have grown close to Islamist organisations including the TTP and the Islamic State. According to the 'Pakistan Security Report 2022' from the Pakistan Institute for Peace Studies, an Islamabad-based NGO, insurgents and their Islamist allies have carried out 71 attacks, both inside and outside Balochistan, in 2022 alone, mainly targeting security and military personnel.

### **Driven by ethnic wedges, economic injustice**

So, why has this conflict persisted for such a long time? One fundamental reason is ethnic difference. People of Balochistan have a shared history, language and other cultural similarities very different from Punjabis or Sindhis.

Pakistan was formed on the basis of religion. However, skewed power relations among the different Muslim ethnicities was almost immediately visible. Punjabi landlords had an almost unchallenged hold over Pakistan's bureaucracy. Ethnic differences were the cause of East Pakistan breaking away in 1971 and are also the driving force behind Baloch nationalism.

Exacerbating ethnic differences are deep economic and political grievances held by the Baloch people. The most recent struggle was actually spurred almost completely by a sense of economic





alienation. Baloch nationalists argue that the Baloch people themselves do not enjoy the fruits of Balochistan's abundant natural resources.

The construction of the China-backed Gwadar Port is in some ways symptomatic of the economic injustice faced by the Baloch population. Punjabi and Sindhi engineers and technical specialists were hired en masse for the project, despite extremely high levels of unemployment among the educated Baloch population. In recent years, Baloch militants have routinely targeted Chinese officials involved in the project.

The Pakistani government has itself blamed foreign actors, including India and Iran, as fomenting trouble in the region to destabilise the country. In 2016, Prime Minister Narendra Modi triggered an outcry in Pakistan when he mentioned Pakistan's atrocities and repression of the Baloch people in his Independence Day speech.



# DreamIAS



## NATION

### FREE FALL

India and Canada took their diplomatic row over the killing of Canadian Khalistani activist Hardeep Singh Nijjar into the rink at the UN General Assembly this week. External Affairs Minister S. Jaishankar warned that the response to “terrorism, extremism and violence” should not be determined by “political convenience”, in what seemed to be a reference to India’s concerns over Khalistani extremism in Canada. He added that countries must not “cherry pick” when to respect “territorial integrity and non-interference in internal affairs” — a clear reference to Canada’s allegations that Indian “government agents” were responsible for the Nijjar killing in Surrey in June. Canadian UN Ambassador Robert Rae appeared to double down on the Canadian allegations, as he spoke about the “extent to which democracies are under threat” due to foreign interference. In effect the statements reflected the impasse between both countries more than 10 days since Canadian Prime Minister Justin Trudeau made his claims in the Canadian Parliament. After expelling each other’s diplomats, India and Canada have curtailed people-to-people ties. While India has suspended all visas to Canadians, Canada has put trade talks on hold. These actions have been taken even before Canada has made any evidence of its allegations against India public, and New Delhi has reiterated that despite two visits by the Canadian National Security Adviser to discuss the Nijjar issue, no concrete evidence has been provided. Nor has Canada completed its own investigation or begun any trial. Despite this, there have been calls from Canadian “Five Eyes” allies that India must cooperate, indicating some pressure from Canada.

The only way out is for Canada to take the first step in proving its allegations, which, in the absence of verifiable evidence, seem to have been levelled prematurely. Mr. Jaishankar has made it clear that such judicial inter-state killings are not the policy of the Indian government. However, it is hard to believe that the leader of one of the most developed countries would make these claims without sufficient cause, and if evidence is shared, the next logical step would be for New Delhi, which has denied the allegations strenuously, to cooperate on any information needed to conclude the Canadian investigation. India’s grievances against Canada for “soft-peddling” the issue of Khalistan extremism and providing “safe havens” for wanted terrorists, as well as Canadian claims of rights violations by security forces in Punjab, and Indian intelligence operations in Canada, date back to the 1980s, and these were the cause of their high-level engagements being frozen for decades. However, never before have trade, travel and tourism ties been cut down so quickly as in the past week. With students, the business community, and the diaspora feeling the brunt, it is hoped the two countries move with some urgency to arrest the free fall in ties.

### WHEN INDIA-CANADA TIES WERE RESET

#### The story so far:

As ties between India and Canada plummet to their lowest point since the 1980s, former diplomats say that a change in Canadian responses to the Khalistan issue are necessary for any future reset in ties, pointing to the 2010 apology by the then Canadian Prime Minister as an example. Addressing families of the victims of the 1985 Air India ‘Kanishka’ Flight 182 which exploded over the Irish coast after a bomb placed in the luggage went off, for which Khalistani separatist operatives were convicted, Canadian Prime Minister Stephen Harper said he was “sorry” on behalf of the Canadian government.



### The apology

“Some wounds are too deep to be healed even by the remedy of time,” Mr. Harper said at the Air India memorial at Humber Bay Park in Toronto on the 25th anniversary of the terror attack, where he admitted for the first time that the bombing was an “atrociousness conceived in Canada, executed in Canada, by Canadian citizens, and its victims were themselves mostly citizens of Canada.” Despite 280 of the 329 on board the Kanishka being Canadian citizens, the Prime Minister at the time, Brian Mulroney, had extended condolences to Prime Minister Rajiv Gandhi, leading to criticism from the Indian community in Canada.

Since the attack, India had expressed its outrage over the slow pace of investigations and the trial, which delivered its verdict in the case only in 2005. Therefore, it was particularly significant that Mr. Harper went on to address fellow political leaders saying they must “not to reach out to”, but rather “carefully and systematically marginalise those extremists who seek to import the battles of India’s past” to Canada.

### ‘Change of heart’

Three important events led up to what experts referred to as Canada’s “change of heart” in 2010. The first was the 9/11 attacks in the U.S. in 2001, after which Canada signed on to a number of terror conventions, abjuring officially a policy of being soft on what it saw as “freedom movements” and allowing those fleeing terror charges from several countries including India, Sri Lanka and Bangladesh into Canada. The second was the 26/11 Mumbai attacks in 2008, which hardened India’s resolve. The third was Prime Minister Manmohan Singh’s visit for the G-20 summit in Toronto, and a chance to reset ties. No Indian Prime Minister had visited Canada since 1973, mainly due to tensions over the Khalistan issue, and although it was a multilateral summit visit, the bilateral meeting with Mr. Harper saw a number of agreements signed, which many think was only possible due to the apology given by him a few days earlier.

“In the joint statement during Dr. Manmohan Singh’s visit in 2010, the very first issue raised was terrorism and the Kanishka bombing. Then came the big breakthrough on civil nuclear cooperation which marked a 180 degree turn in Canada’s position on cooperation with India in this sector,” said Pankaj Saran, former Deputy National Security Adviser, who served in Prime Minister Singh’s office in 2010, and now runs the NatStrat thinktank in Delhi.

The shift, and the subsequent visit by Prime Minister Narendra Modi in 2015 changed India-Canada cooperation substantially. Trade doubled during the decade from about \$5 billion to \$10 billion, investment from Canada shot up from \$700 million to more than \$55 billion, and the two sides set up working groups on countering terrorism, improving strategy, energy ties, nuclear fuel MoUs and a number of other areas. However, diplomats say that after the election of Prime Minister Justin Trudeau’s Liberal Party, and his dependence on the New Democratic Party led by Jagmeet Singh for his minority government, has meant that the Trudeau government doesn’t share the previous government’s avowal of ties with Khalistan separatists.

### Reasons for tensions

“Canada and India should have enjoyed the closest of ties. Yet that is not to be. The Khalistani issue continues to bedevil the relationship, with certain political parties especially the Liberals prioritising their engagement with them over ties with India, as they control a few parliamentary constituencies and allegedly extend material and financial support to the latter parties,” former High Commissioner to Ottawa Vishnu Prakash told The Hindu.



Some, like former Foreign Secretary Nirupama Rao said the situation is hard to repair as the “Canadian record of tolerating the most egregious, criminal activity by some extremist members of the Sikh community” has continued despite denials by “successive Canadian governments.” Actions like the posters targeting Indian diplomats, holding a referendum for the Sikh diaspora, and the tableau glorifying Prime Minister Indira Gandhi’s assassination and even feting the Air India 182 bombing masterminds have added to the tensions. When asked, Mr. Trudeau has denied supporting hate speech, but said that they will protect “freedom of speech” in the country.

“This kind of allegation, that India has assassinated a Canadian in Canada has never been made before. Mr. Trudeau has gone too far — and given that he started the row, he will have to find a way to end this,” said a former diplomat who served during the Harper era and was witness to the apology. The ties now, in contrast, have hit what he calls “rock bottom.”

## WHAT IS THE ‘FIVE EYES’ INTELLIGENCE ALLIANCE?

### The story so far:

The recent allegations by Canadian Prime Minister Justin Trudeau linking the killing of Khalistani leader Hardeep Singh Nijjar on Canadian soil to the Indian government have put the spotlight on the intelligence-sharing alliance ‘Five Eyes’, which is believed to have provided the information that “helped” Canada.

### Who are the ‘Five Eyes’?

The ‘Five Eyes’ is a multilateral intelligence-sharing network of five countries, Australia, Canada, New Zealand, the U.K. and the U.S. It is both surveillance-based and tracks signals intelligence (SIGINT). Intelligence documents shared between the member countries are classified ‘Secret—AUS/CAN/NZ/UK/US Eyes Only,’ which gave the group its title ‘Five Eyes.’ The alliance between the U.S. and the U.K. evolved around the Second World War to counter the Cold War Soviet threat. The two countries, which had successfully deciphered German and Japanese codes during the war, forged a collaboration to share intelligence related to signals such as radio, satellite and internet communications. In 1946, the alliance was formalised through an agreement for cooperation in signals intelligence.

The treaty called the British-U.S. Communication Intelligence Agreement, or BRUSA (now known as the UKUSA Agreement), was signed between the State-Army-Navy Communication Intelligence Board (STANCIB) of the U.S. and the London Signal Intelligence Board (SIGINT) of Britain. Its scope was limited to “communication intelligence matters only” related to the “unrestricted” exchange of intelligence products in six areas: a collection of traffic; acquisition of communication documents and equipment; traffic analysis; cryptanalysis; decryption and translation; and acquisition of information regarding communication organisations, practices, procedures, and equipment. The arrangement was later extended to ‘second party’ countries —Canada joined in 1948, while Australia and New Zealand became part of the alliance in 1956.

Though the intelligence alliance came together in the 1940s, it remained a top secret for long. The then Australian PM Gough Whitlam did not know about the existence of BRUSA, regarded as one of the most secret agreements, until 1973, according to a recent article in the Journal of Cold War Studies. In fact the text of the agreement was first officially released in public after over 60 years in 2010.

### How does the network work?

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



Initially, the partners are assigned respective SIGINT mandates. A Canadian intelligence officer writes in a military journal (2020) that the U.S. is responsible for Russia, northern China, most of Asia and Latin America; Australia covers southern China, Indo-China and its close neighbours, such as Indonesia; the U.K. is in charge in Africa and west of the Urals within the former Soviet Union; and New Zealand is responsible for the Western Pacific, while Canada handles the polar regions of Russia.

The goalpost of the Five Eyes, however, has shifted following the collapse of the Soviet Union and the emergence of new global challenges like terrorism and the growing influence of China.

The Five Eyes have become involved in ocean and maritime surveillance, scientific and defence intelligence analysis, medical intelligence, geospatial intelligence, counterintelligence, counterterrorism, and the continuous sharing of intelligence products via a secret collective database known as 'Stone Ghost', the Canadian officer notes.

#### **What are the concerns?**

There have been several concerns regarding the privacy, security and methods of working of the intelligence alliance, which remained shrouded in mystery for long.

The alliance was embroiled in a major controversy in 2013 following the disclosure of classified documents by Edward Snowden, a former National Security Agency (NSA) contractor. Mr. Snowden described the network as a "supranational intelligence organisation that doesn't answer to the laws of its own countries."

### TENTACLES OF KHALISTAN

Yet again, the Babbar Khalsa International (BKI) has made headlines with the National Investigation Agency (NIA) announcing a reward of ₹10 lakh each on designated Pakistan-based terrorists Harwinder Singh Sandhu, alias Rinda, and Lakhbir Singh Sandhu alias Landa, who, along with many other pro-Khalistani elements, have been operating from Canada.

Believed to have been formed in the aftermath of the April 13, 1978 clashes in Amritsar, involving the Akhand Kirtani Jatha and the Nirankaris, two opposing sides, the outfit is headquartered in Pakistan's Lahore and has operated under patronage of the Inter-Services Intelligence (ISI). It is currently headed by 69-year-old Wadhawa Singh, according to Indian security agencies.

The BKI, one of the oldest pro-Khalistan groups, was co-founded by Sukhdev Singh Babbar from Dassuwal (Amritsar) and Talwinder Singh Parmar from Kapurthala, who had migrated to Canada in May 1970. What followed was a series of assassinations, attacks on police forces and bombings at public places.

Over the years, the BKI has spread its network from India and Pakistan to other parts of the world, including Canada, the U.S. and Europe. It has also been operating in close coordination with other banned organisations such as the International Sikh Youth Federation. The outfit has been proscribed in India, Canada, the U.K., the EU, Japan, Malaysia and the U.S.

#### **Plane bombing**

On June 23, 1985, the BKI triggered a mid-air explosion aboard Air India 182, killing 329 people, including 268 Canadian, 27 British and 24 Indian citizens. The bomb was planted in Canada. Another plane to take off from Narita International Airport in Japan, Air India 301, was also

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



targeted. However, the bomb exploded before it was planted. Two baggage handlers were killed in the blast.

Wadhwa Singh took over as the BKI chief after Sukhdev Singh Babbar and Talwinder Singh Parmar were killed in police encounters in 1992. Under the leadership of the then Punjab DGP, K.P.S. Gill, most of the pro-Khalistan terrorists were either arrested or eliminated by the police and security forces.

However, the BKI regrouped and on August 31, 1995, executed the assassination of the then Punjab Chief Minister Beant Singh through “human bomb” Dilawar Singh at the Chandigarh secretariat. The blast also claimed the lives of 17 others, including three security personnel. In the intervening night of January 21-22, 2004, the BKI’s Jagtar Singh Hawara, Jagtar Singh Tara and Paramjit Singh Bheora, three main accused in the Beant Singh assassination case, escaped from Chandigarh’s high-security Burail jail along with a murder convict after digging a 94-foot tunnel. Hawara and Bheora were arrested within two years, but Tara remained at large.

Tara eventually parted ways with the BKI owing to certain differences with Wadhwa Singh and floated another outfit named Khalistan Tiger Force (KTF). However, security agencies have reasons to believe that he continued to enjoy the ISI’s support. In January 2015, he was tracked down to Chonburi in Pattaya, Thailand, detained and brought back to India. Following his re-arrest, Hardeep Singh Nijjar, who was shot dead by unidentified assailants on the parking lot of a gurdwara in Canada’s Surrey on June 18, had taken over as the KTF chief.

As per the Ministry of Home Affairs’ notification under the Unlawful Activities (Prevention) Act in July 2020, the BKI under the patronage of Wadhwa Singh has been involved in various terrorist attacks, including the Air India Flight 182 bombing; Beant Singh assassination; and Burail jail break.

The NIA has been probing multiple cases involving the BKI and its members. In March, it had filed a supplementary chargesheet against three alleged aides of the outfit’s Harwinder Singh Sandhu, who has been sending consignments of arms, ammunition and explosives from across Pakistan via drones. Wadhwa Singh, who is a designated “individual terrorist”, faces eight cases in India.

His son Jitender Vir Singh and son-in-law Satnam Singh have been operating from Germany.

#### INDIANS FORM A BIG CHUNK OF DIASPORA IN CANADA

Last week, Canadian Prime Minister Justin Trudeau alleged that agents of the Indian government were involved in the killing of Hardeep Singh Nijjar, a Canadian citizen, in Surrey. India called the allegations “absurd” and “motivated”. India had declared Nijjar, the head of the Khalistani Tiger Force, a terrorist in 2020, and has accused Canada of providing a safe haven for people who support the Khalistani cause.

Soon after the accusation, the head of Indian intelligence in Canada was expelled. India retaliated by expelling a senior Canadian diplomat. Indo-Canadian relations have been turbulent over the past few years, in large part due to what India sees as Canada’s sympathetic approach towards supporters of the Khalistan movement. Canada has a large Sikh and Punjabi immigrant diaspora population.

On September 21, India suspended visa services in Canada. This has reportedly led to anxiety among students, their families, and other travellers who aspire to go to Canada, especially



Punjabis. People who identified Punjabi as their ethnic or cultural origin during the 2021 Canadian census formed the largest share of Indians in Canada, followed by Tamilians, Gujaratis, and Bengalis. More importantly, 30% of Punjabis in Canada belong to the second or third generation (persons not born outside Canada). A higher share of Goans and Tamils are from the second or third generation; however, their overall numbers are relatively lower than Punjabis.

Indians form the largest share of immigrants, foreign students, foreign workers, and other groups in Canada. India overtook China and the Philippines to form the highest share of immigrants in Canada in the 2016-2021 period. Similarly, the highest number of applications received for permanent residency in Canada between January 2020 and July 2023 were from Indians followed by the Chinese. Indians also submitted the highest number (8.7 lakh) of new study permit applications to Canada in the same period, followed by Nigerians (1.2 lakh). The highest share of International Mobility Program work permit holders were also Indians (5.4 lakh) followed by Ukrainians (1.5 lakh).

Trade equations have also taken a hit. Canada postponed a trade mission to India that was scheduled in October. It has also paused talks on a proposed trade treaty with India. Canada imported \$1.7 billion worth of medicaments from India in the period, but of Canada's total medicaments imports, India's share was only 4%. Canada imported diamond, jewellery and linen products in large numbers from India. It is also highly dependent on India for these items.

India imported \$3.6 billion worth of coal from Canada, but of India's total coal imports, Canada's share formed only 2.6%. Fertilizers, leguminous vegetables, newsprint and uranium/thorium ore were items that India imported heavily from Canada. India's dependency on Canada was relatively high for these items as well.

## POLITICISING EXCHANGES

The Asian Games, which were opened on September 23 by Chinese President Xi Jinping in Hangzhou following a spectacular opening ceremony on a scale that has now come to be expected from China, are meant to showcase a broader message of Asian solidarity. The days leading up to the opening ceremony of the 19th edition were, however, marked by anything but. The day before the opening, Union Sports Minister Anurag Thakur cancelled his visit to China as a mark of protest to the last-minute denial of entry to three Indian Wushu players from Arunachal Pradesh. The three athletes — Nyeman Wangsu, Onilu Tega and Mepung Lamgu — were given the accreditation needed to travel along with the rest of the Indian team for the Games. However, in what appears to be a directive issued to the airline by China, the athletes were told they could not board their flight. China has in the past issued stapled visas to Indians from Arunachal Pradesh. Only in July, three wushu players from Arunachal Pradesh, due to take part in the World University Games in Chengdu, were issued stapled visas. In this instance, the decision to bar the athletes appears particularly vindictive as visas were not needed to travel for athletes issued digital accreditations. Indian officials believe Beijing thus went out of its way to bar their travel by instructing the airline to not allow them to board. The Ministry of External Affairs in a statement described the action as “targeted and pre-meditated”.

This is, unfortunately, not the first instance of Beijing using sporting events that should have no place for politics to score geopolitical points. In February last year, Beijing ill-advisedly selected the People's Liberation Army's commander involved in the Galwan Valley clash as one of the torchbearers for the Winter Olympics. Both then and now, the organisers have appeared more than happy to look the other way given China's status as both a willing host and strong financial



backer of such events. The acting President of the Olympic Council of Asia, Randhir Singh, who met with President Xi in Hangzhou, in remarks to journalists chose not to call out the denial of entry to athletes, instead only saying the matter was being discussed. Beyond the Asian Games, the latest Chinese action serves as a reminder of the current distrust in bilateral relations, as well as of the absence of adequate channels of communication to deal with long-persisting thorny issues, including visas. New Delhi has correctly made clear that restoring normalcy in relations will not be possible without completing the disengagement process along the Line of Actual Control and restoring peace in border areas. Until Beijing reviews its stance on the border, the current state of affairs, which suits neither India nor China, is likely to endure.

#### TIBETANS ARE SEEKING MORE AUTONOMY, NOT SEPARATION FROM CHINA, SAYS DALAI LAMA

Speaking to journalists at his home in Dharamshala on Monday, ahead of what is expected to be a gruelling series of trips around India, including visits to Sikkim, Karnataka, and Bodh Gaya in Bihar this year, the Dalai Lama repeated some of the seemingly conciliatory remarks he has made in the past. China has, however, rejected these remarks, accusing the Dalai Lama, who has lived in exile in India since 1959, of being a “splittist” or separatist.

“We want to have full autonomy, as a part of the People’s Republic of China. Then we can help millions of Chinese, [without] political separation, and remaining a part of the People’s Republic,” the Dalai Lama said while speaking to the small group of journalists, including from The Hindu, from Delhi. He added jokingly that he could then “brainwash” the Chinese as well, in a light-hearted response to China’s allegations that the Tibetan Buddhist diaspora spreads “propaganda” about atrocities in Tibet by the Chinese government.

In July, the Dalai Lama had surprised many by announcing that he had been contacted “officially or unofficially” by the Chinese government. “In order to deal with Tibetan problems, they want to contact me. I am also ready [for talks],” he added.

While the Chinese government did not confirm any talks at present, Beijing has maintained at various points, including in 2021, that any talks it holds are for the “future of the Dalai Lama”, not the “future of Tibet”, indicating that the Dalai Lama may be allowed to return to Lhasa for a visit.

When asked by The Hindu if he would like to return to Lhasa, and to his summer home at Norbulingka in the city, the Tibetan leader was clear that he hoped to live in India, although he would like to revisit Tibet, especially as he perceives a “change” in China.

“China is also now changing... I think many people [in Tibet] love me... similarly many Chinese love me... and so they want me to go back [to Tibet]. But I do not want to stay there. Lhasa is very high... Dharamshala’s height is very suitable for my physical condition now,” he said in response, indicating the high-altitude issues that many visitors face on the Tibetan plateau.

#### FOLLOWING INDIA, U.S. RAISES CONCERNS OVER CHINESE VESSEL’S VISIT WITH SRI LANKA GOVERNMENT

In a recent meeting with Sri Lanka’s Foreign Minister Ali Sabry, Under Secretary of State for Political Affairs Victoria Nuland took up the coming visit of Chinese research vessel Shi Yan 6 to Sri Lanka, the Daily Mirror newspaper reported on Monday. Reportedly, Mr. Sabry reassured the





American official that Colombo would adhere to a “Standard Operating Procedure” that the government has recently finalised, for all foreign vessels intending to call at a Sri Lankan port.

New Delhi had recently raised the matter with a top Sri Lankan official, Colombo-based sources told The Hindu.

While Sri Lanka’s Ministry of Defence has made its recommendation on the vessel’s visit to the Ministry of Foreign Affairs, an official comment from the Foreign Ministry is awaited. According to local media, defence authorities have cleared the visit.

Earlier this month, China’s state-run news channel CGTN reported that “Chinese geophysical scientific research vessel Shiyan 6” or (Experiment 6) was heading out on an “expeditionary voyage” in the eastern area of the Indian Ocean, departing from Guangzhou, south China’s Guangdong Province. “Organised by the South China Sea Institute of Oceanology (SCSIO) under the Chinese Academy of Sciences, the vessel is scheduled to operate at sea for 80 days with 28 scientific research projects from 13 research teams onboard, covering a range of more than 12,000 nautical miles (roughly 22,200 km),” it said.

### **Strong reservation**

Sri Lanka’s National Aquatic Resources Research and Development Agency (NARA), said to be a partner in the vessel’s research activities in Sri Lankan waters, earlier stated that the data collected during the process would be in its possession. The research vessel’s scheduled visit will come months after another Chinese warship docked at the Colombo port for a few days. The visits assume significance after Chinese military ship Yuan Wang 5 arrived at Sri Lanka’s Hambantota port in August last year, despite India and the U.S. expressing strong reservation at the time. China maintained that it was “completely unjustified for certain countries to cite the so-called ‘security concerns’ to pressure Sri Lanka”.

Colombo’s decision to allow the visit last year — after deferring it by five days — strained diplomatic ties with New Delhi, at a time when India extended unprecedented economic relief to the island nation that was experiencing its worst financial meltdown. Subsequently, President Wickremesinghe and top officials from the Sri Lankan side repeatedly sought to reassure India that Sri Lanka will ensure that its territory is not used for any activity that could threaten India’s security interests.

Meanwhile, the High Commission of India in Colombo recently organised a curtain raiser to the Global Maritime India Summit (GMIS) to be held in India from October 17 to 19 in Mumbai. Sri Lanka’s Minister of Ports, Shipping and Aviation Nimal Siripala de Silva, who was Chief Guest at the event, emphasised the importance of “close collaboration, exchange of knowledge and adaptation of new technology for growth of the maritime sector”, according to a statement from the Indian mission.

## **DAYS WHEN A FEW NATIONS SET AGENDA ARE OVER, JAISHANKAR TELLS UNGA**

Addressing the 78th session of the United Nations General Assembly (UNGA), External Affairs Minister S. Jaishankar spoke in strong terms of a new, more “equitable and democratic” world order emerging, one that was more reflective of diverse interests. He linked these diverse interests to India’s G-20 Presidency, saying that “the days when a few nations set the agenda” were over.



While the rules-based order and UN Charter were invoked in deliberations, it was still a few nations that shaped the agenda and sought to set the norms, Mr. Jaishankar told the General Assembly in New York on Tuesday morning.

“A fair, equitable and democratic order will surely emerge, once we all put our minds to it. And for a start, that means ensuring that rule makers do not subjugate rule takers,” he said, adding that “vaccine apartheid” should never be allowed to recur and climate action must address historical responsibilities (the idea that wealthy countries must significantly finance the response to climate change).

Mr. Jaishankar was speaking at the end of a week of national addresses, where Russia’s invasion of Ukraine has continued to remain a focus, especially in the speeches of Western leaders. However, a second issue emerged last week, with an explosive allegation by Canadian Prime Minister Justin Trudeau that the Government of India was involved in assassinating a Khalistani separatist leader in British Columbia in June.

#### ‘AGE OF CONSENT UNDER POCSO MUST REMAIN’

The government should not tinker with the age of consent — currently 18 years — under the Protection of Children from Sexual Offences (POCSO) Act, the Law Commission said in a report made public on Friday. Instead, it advised the introduction of “guided judicial discretion” while sentencing in cases that involve the tacit approval of children in the 16 to 18 years age bracket.

The 22nd Law Commission, headed by Justice (Retired) Ritu Raj Awasthi, submitted its report (no. 283) to the Law Ministry on September 27. It was posted on the Ministry website on Friday.

In the report, the Law panel noted that certain amendments would be required in the POCSO Act, 2012 to remedy the situation in cases involving tacit approval, though not consent under law, on the part of children aged between 16 and 18 years.

The panel said that reducing the age of consent would have a direct and negative bearing on the fight against child marriage and child trafficking; it also advised the courts to tread with caution even in cases related to “adolescent love”, where criminal intention may be missing.

The reference on the age of consent was made to the Law Commission on November 9, 2022 by the Karnataka High Court (Dharwad Bench), which asked the Commission “to rethink on the age criteria for consent, taking into consideration the rising number of cases relating to minor girls above the age of 16 years falling in love, eloping and having sexual intercourse with the boy”.

A similar reference was also made by the Madhya Pradesh High Court (Gwalior Bench) in April this year, where the Court noted that the enforcement of the POCSO Act, in its present form, “causes injustice in cases of statutory rape where de facto consent is present”.

Taking note of such judicial observations, the Commission noted that cases where there is tacit approval do not merit the same severity as “cases that were ideally imagined to fall under the POCSO Act”.

“The Commission, therefore, deems it fit to introduce guided judicial discretion in the matter of sentencing in such cases. This will ensure that the law is balanced, thus safeguarding the best interests of the child,” Justice Awasthi said in the letter.



On September 27, the Law Commission also submitted a report (no. 282) in which it recommended rolling out the registration of e-FIRs in a phased manner, beginning with offences that attract a jail term of up to three years.

The panel said that e-FIRs will tackle the persisting issue of delays in the registration of FIRs, and will allow citizens to report crimes in real time. “Clinging on to an archaic system of registering FIRs does not augur well for criminal reforms,” Justice Awasthi noted in his covering letter to the Law Minister.

## LOK SABHA GOES TO A NEW HOME, TWO CRUCIAL MATTERS OF PROBITY STILL UNDECIDED

As Parliament moved to a new building last week, members of Lok Sabha carried along two matters that they have kept pending for years now. In both matters, the MPs themselves are the affected party, and seek a commitment to good behaviour and proper conduct from them.

The first is the formulation of a Code of Conduct for members of Lok Sabha; second, a declaration of members’ business interests. Both conditions have long been applicable to members of Rajya Sabha.

### Code of Conduct

On September 15, three days before Parliament convened for the Special Session, Lok Sabha said in response to a query by The Indian Express under the Right to Information (RTI) Act: “The matter (of the Code of Conduct) is under consideration of the Committee on Ethics.”

The Committee on Ethics has in fact been considering the matter for more than eight years.

On December 16, 2014, the Lok Sabha Ethics Committee headed by Gandhinagar MP L K Advani submitted its report on proposed amendments to the Rules of Procedure and Conduct of Business in Lok Sabha to Speaker Sumitra Mahajan. The report was tabled in the House two days later.

The committee’s recommendations were included in the report of the Rules Committee of Lok Sabha, which was laid on the table of the House on August 5, 2015. The report said [the Ethics Committee] shall “formulate a Code of Conduct for Members and suggest amendments or additions to the Code of Conduct from time to time”.

It also said: “...Rajya Sabha is already maintaining a register of their Members’ interests. ...The Committee recommends that the Committee on Ethics may examine and recommend the nature of Members’ interests to be declared and the form of Register of Members’ interest to be maintained for Members of Lok Sabha.”

## WHAT WILL HOLD UP WOMEN’S RESERVATION BILL?

### The story so far:

In a historic move, Parliament passed the Constitution (One Hundred and Twenty Eighth Amendment) Bill, commonly referred to as the women’s reservation Bill, which provides 33% reservation for women in the Lok Sabha and State Legislative Assemblies. On September 21, the Bill secured all the votes in the Rajya Sabha, a day after securing near-unanimous support in the Lok Sabha. It will now require the President’s assent to become law.



### **What does the Bill say?**

The Nari Shakti Vandan Adhiniyam, as the Bill is called, seeks to reserve one-third of all seats for women in the Lok Sabha, the State Legislative Assemblies, and the National Capital Territory of Delhi. This will also apply to seats reserved for Scheduled Castes (SCs) and Scheduled Tribes (STs) in the Lok Sabha and the State Legislative Assemblies. The seats reserved for women will be rotated after each delimitation exercise.

### **What are the main issues regarding the Bill?**

The Opposition has questioned the linking of the implementation of women's reservation with the periodical delimitation exercise as this would mean a prolonged delay in the quota coming into force. Delimitation, or the readjustment of territorial limits of the Lok Sabha and Assembly constituencies, as well as the number of seats in the Assembly and the Lok Sabha in each State, is a periodical exercise done based on the figures available in the latest Census.

The last delimitation order of the Delimitation Commission was issued in 2008, fixing the boundaries of all constituencies. However, there is currently a freeze on the readjustment of the number of seats in the State Assemblies and the Lok Sabha. In 2002, Article 82 was amended to the effect that it shall not be necessary to readjust the allocation of Lok Sabha constituencies State-wise and the division of each State into constituencies until the figures of the first Census held after 2026 were available.

The main issue raised was whether this would mean that the women's quota would not be implemented until the 2031 Census figures are available and delimitation is subsequently done. The decadal Census due in 2021, but delayed due to the COVID-19 pandemic, is yet to be conducted. However, Home Minister Amit Shah informed Parliament that the Census and delimitation exercise would be done immediately after the general election (due in 2024). This means that women's reservation will not be possible for a few years at least.

Another issue raised by the Opposition concerns the question of having a sub-quota for women from Other Backward Classes (OBCs). While there is reservation for SCs and STs in the Lok Sabha and State Legislative Assemblies, there is no separate reservation for OBCs, who constitute more than 40% of the population. Two members in the Lok Sabha — Asaduddin Owaisi and Syed Imtiyaz Jaleel of the AIMIM — opposed the Bill on the ground that it should have separate quotas for OBC and Muslim women as both communities are under-represented in Parliament and Legislative Assemblies.

### **What laid the ground for the Bill?**

It was the enactment of the 73rd and 74th amendments to the Constitution in 1993 which laid the ground for the women's reservation Bill. The two amendments, which introduced panchayats and urban local bodies in the Constitution, mandate one-third reservation for women in these bodies. In 2006, Bihar became the first State to provide 50% reservation for women in panchayat bodies. At present, more than 20 States have 50% reservation for women at the panchayat level.

There have been several studies on how reservation has led to greater representation of women in political bodies and also influenced policymaking. In a 2001 paper, Raghavendra Chattopadhyay and Esther Duflo studied the impact of women's leadership on policy decisions in West Bengal and found that "women invest more in infrastructure that is directly relevant to the needs of rural women (water, fuel, and roads)..." and that "women are more likely to participate



in the policy-making process if the leader of their village council is a woman.” In the book *And Who Will Make Chapatis?*, Bisakha Datta, Meenakshi Shedde, Sonali Sathaye and Sharmila Joshi published their findings on all-women panchayats in Maharashtra, where they too found that women leaders gave priority to women’s problems.

#### **Was this the first attempt to pass the Bill?**

There were several attempts made to bring about reservation for women in the Lok Sabha and State Legislative Assemblies. The 81st Constitution Amendment Bill was first introduced in the Lok Sabha in 1996 by the Deve Gowda-led United Front government. It was referred to a Joint Committee which gave certain recommendations. The Bill failed to get the approval of the House in 1997 and lapsed later with the dissolution of the Lok Sabha. In 1998, the Atal Bihari Vajpayee-led National Democratic Alliance government introduced the Bill, but it lapsed after the government fell in 1999. The Bill was reintroduced in 1999, 2000, 2002 and 2003, but failed to get passed. In 2010, the Manmohan Singh-led United Progressive Alliance government tabled the Bill in the Rajya Sabha. However, the Bill was never taken up for consideration in the Lok Sabha and lapsed with the dissolution of the 15th Lok Sabha.

At present, there are 82 women in the Lok Sabha; after implementation, there should be at least 181 women. The share of women will also increase significantly in Legislative Assemblies, where women now comprise less than 10% in 20 States and Union Territories.

#### **PLAYING TO THE GALLERY**

Prime Minister Narendra Modi had called for a new chapter in parliamentary history, and exhorted members to “forget all past bitterness”, as they moved into a shiny new building last week. “Whatever we are going to do in this new Parliament building, it should be an inspiration to every citizen in the country,” he had said. Fittingly for a new beginning, Mr. Modi’s government brought a Bill for reserving 33% seats for women in Parliament and State Assemblies. The proposal found near unanimous acceptance across the political spectrum, though some parties were concerned about the timeline for its implementation, and some wanted a carve out for Other Backward Classes. But this show of unity and purpose was soon overshadowed by incidents that lowered the majesty of the institution of parliament. A Bharatiya Janata Party (BJP) Member of Parliament hurled toxic communal slurs at a fellow MP from the Muslim community even as some other senior leaders of the ruling party smiled on in the Lok Sabha during a discussion, of all things on the success of India’s Chandrayaan mission, hardly a partisan issue. In the Rajya Sabha, visitors in the gallery reportedly raised political slogans in support of the government during the discussion on the women’s reservation Bill, a singularly inappropriate method of credit appropriation.

The conduct of the BJP MP was condemnable but what compounds it is the party’s overall approach that followed. Union Defence Minister Rajnath Singh who was present during the outrage did apologise to the House for the remarks. But soon after that, the party fielded several spokespersons to explain away the episode, and they accused the one who was at the receiving end of provoking the incident. An equivalence has also been sought between communal abuse against a fellow member and remarks allegedly made by some Opposition members about faith and the existence of god. The Lok Sabha Speaker who has in the past suspended Opposition members on charges of misconduct is expected to take a more serious view of this incident, and set out an example, making it clear that the House cannot condone communal slurs against any one, and certainly not a member. Several Opposition leaders have written to Rajya Sabha



Chairman regarding sloganeering from the visitor's gallery. That episode too calls for exemplary punitive and preventive action. The new building must foster healthy dialogue among members, and between the institution and the people.

#### OVER 860 SERIOUS CHARGES PENDING AGAINST 194 MPS BEFORE POLLS

Last week, the women's reservation Bill was passed in both Houses of Parliament. During the parliamentary debates before the passage of the Bill, several MPs voiced concern about the fact that many members have serious cases of crimes against women pending against them. Some MPs named or made veiled references to MP Brij Bhushan Sharan Singh, former president of the Wrestling Federation of India, who is facing sexual harassment allegations from women wrestlers. A 1,000-page charge sheet filed by the Delhi police in June accused Mr. Singh and former WFI staff member Virendra Tomar of offences under Sections 354 (assault or criminal force to woman with intent to outrage her modesty), 354A (sexual harassment), and 354D (stalking) of the Indian Penal Code.

On September 20, during the discussion on the Bill in the Lok Sabha, Trinamool Congress MP Kakoli Ghosh Dastidar accused the BJP of not taking action against MPs accused of sexual harassment, citing the case against Mr. Singh. CPI MP Elamaram Kareem from Kerala and Trinamool Congress MP Derek O'Brien from West Bengal also mentioned the sexual harassment case against the former WFI chief while critiquing the BJP in the Rajya Sabha. Trinamool MP Mausam Noor said, "What is the name of the Lok Sabha MP of yours who shamed us, who harassed our champion wrestlers? On behalf of the women of India, I want to know what he is still doing, sitting here in this new building." Shiromani Akali Dal MP Harsimrat Kaur Badal said in the Lok Sabha, "In Haryana, a minister is accused of sexual assault but enjoys a cabinet rank status." She also shared data on the number of MPs who have criminal cases pending against them.

According to the Association of Democratic Reforms' analysis of 763 Lok Sabha and Rajya Sabha MPs, 306 had criminal cases (40%) and 194 (25%) had serious criminal cases pending against them when they filed their affidavits. Serious criminal cases include non-bailable offences, murder, kidnapping, prevention of corruption, rape and other crimes against women.

The 21 MPs who had pending charges of involvement in crimes against women, four of which were rape, at the time of their election. It is important to note that a single case can encompass several charges. The IPC charges against women noted in the table are Sections 354, 366 (kidnapping, abducting, or inducing woman to compel her marriage), 376 (rape), 509 (word, gesture or act intended to insult the modesty of a woman), 354A, 354B (assault or use of criminal force to woman with intent to disrobe) and 498A (husband or relative of husband of a woman subjecting her to cruelty). Ten of these MPs were from the BJP, five were from the Congress, three from the YSR Congress Party, and the rest from other parties. Five of them, all from the BJP, were elected from West Bengal. Three were from Kerala, all from the Congress; and three from Andhra Pradesh, all from the YSR Congress Party.

Bapu Rao Soyam, a BJP from Telangana, had 55 serious charges, the highest, followed by Dean Kuriakose of the Congress from Kerala (37). In total, 860 serious charges were pending against 194 MPs.



## POETRY IN PARLIAMENT SETS OFF A THAKUR VS BRAHMINS DEBATE

Participating in the debate on the women's reservation Bill in Rajya Sabha, Mr. Jha had quoted a verse from popular poet Om Prakash Valmiki's 'Thakur ka Kuan' (Thakur's well), which made an appeal to "kill the Thakur within".

Valmiki, who hailed from Uttar Pradesh, is known for his poems which reflected the condition of Dalits and it was his way of creating awareness in the society.

The remarks have drawn criticism from Thakur MLAs cutting across party lines, and also stirring a debate within the RJD. Chetan Anand, RJD MLA from Sheohar, called Mr. Jha a "hypocrite".

He said, "Thakur society includes people from all walks of life and targeting one caste in the name of social justice is hypocrisy. Such statements will not be tolerated. Why can't you kill Brahmin instead of Thakur. He is trying to project Thakur community in negative manner."

However, Mr. Jha has the party's backing with RJD national vice-president Shivanand Tiwari saying no controversial statement has been made.

"Even I have heard that speech. I also like the poem which Manoj Jha recited in the Rajya Sabha and am one of its admirers. Valmiki hails from the Bhangi community (Dalit) and the poet has expressed his pain and sorrow. He is saying that he does not have anything on earth and everything belongs to Thakur. Over here Thakur is the symbol of feudal mindset. I think people are just misinterpreting his speech," Mr. Tiwari added.

The RJD also posted his speech on X (formerly Twitter) calling it "brilliant, strong and lively".

Party supremo Lalu Prasad said, "Everyone knows that Manoj Jha is an intellectual person. Those who speak against him are doing caste politics."

Janata Dal (United) MLC Sanjay Singh said the Thakur community "is not weak" and if required will not shy from fighting.

Raghavendra Pratap Singh, BJP MLA, demanded that Mr. Jha withdraw this statement or be ready to face the consequences.

Senior BJP leader and Union Minister Giriraj Singh said that Mr. Prasad should apologise on behalf of Mr. Jha.

Mr. Jha told The Hindu, "When I spoke in Parliament, I was making an argument on why there is a very dominant resistance to the very idea of inclusion of subaltern groups. To strengthen my argument I recited Valmiki's poem."

## REVIVING EDITORIAL PROCESSES

Good journalism, Carl Bernstein of the Watergate fame said, is "trying to "obtain the best attainable version of the truth," which is "a simple matter but difficult to achieve." This search for the truth becomes complicated in situations of conflict when different sides have different versions of the truth. Multiple vantage points can lead to multiple versions of the truth, but a reporter has to try to be objective and file copy before the deadline. The dominance of electronic and digital media, which demand instant reporting, has made the handling of conflicting versions all the more difficult. Now, when the state tries to be the ultimate arbiter of the truth, and uses law



and the police to discipline the media, the journalist is faced with an impossible situation. Journalism easily turns into a conflict with law.

Reporters who seek to unravel facts about ethnic, caste, and religious conflicts have faced various charges in recent years. The state has been clear that it wants to restrict reporting or direct it in a particular course. The government wants to use fact-checking as an instrument of control. When the state claims monopoly over violence and fact, or even truth, its dominance over the society becomes unchallengeable. While the state's attempt to control the media through formal and informal means is dangerous, what is also dangerous is the proliferation of misinformation that creates strife and triggers violence. The state wants to exercise its authority to control the narrative, in the name of controlling misinformation.

Traditionally the role of the editor was to judge what is publishable news and enforce a process for making that conclusion. The era of so-called citizen journalism has made the role of the editor redundant. Anyone can write or broadcast anything without verification or adherence to any rules. This is part of an anti-elitism that has gripped all democracies. The demise of editorial process in news production has had violent consequences. But using law enforcement to resolve this problem will lead us to authoritarianism. The answer lies in reviving the role of the editor, and re-establishing the rigorous processes for news gathering and dissemination.

In this context, it is interesting that the Manipur government is targeting the Editors Guild of India (EGI) for trying to underscore professional standards in reporting on the ongoing conflict in the State. An EGI team that produced a study on reporting on the conflict stands accused of promoting enmity between communities. The Supreme Court is now examining the entire episode and will decide on quashing the FIRs against the EGI team. The fundamental question being probed by the court is whether reportage, if opinionated or even erroneous, can attract criminal liability. The Chief Justice of India has asked the Manipur government whether a report, which, according to the journalist's best knowledge, truthfully presents the situation on the ground, can be construed by the state as a deliberate attempt to provoke communal violence and become the basis for prosecution under Section 153A of the Indian Penal Code. The apex court has said that an opinion may be right or wrong. Right to free speech includes the right to make a wrong opinion. An erroneous point of view cannot be criminally prosecuted under Section 153A.

It is not that editors or professional bodies are infallible. Editorial processes often get it wrong. But to have the state as the super editor is a deeply problematic solution. News platforms and professional bodies need to up their game, and the state and the judiciary should support that process. Social media, intense competition among various platforms, and polarisation in society all make the editorial processes difficult. But those are also the reasons why professional standards are required more than ever before, to protect a healthy environment of free speech that is sustainable.

#### EXTENDED EXCLUSION

Hill areas in Manipur will continue to be under the Armed Forces (Special Powers) Act (AFSPA) for another six months from October. The State government has issued a notification to extend the law's imposition to the whole State, barring the areas falling under 19 police stations in the Imphal valley. The notification maintains the status quo on the applicability of the potent law that grants extensive powers to the armed forces in notified 'disturbed areas' in the use of force. In normal circumstances, the only question that may have arisen is whether AFSPA is needed any longer. However, given the violent ethnic conflict since this May between the Meitei and the Kuki

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





communities, the exclusion of the Imphal Valley from its purview even while extending it elsewhere comes across as quite ironical. The Army had sought its re-imposition in the Valley districts, as it felt that the absence of the law is hampering its operations against insurgent groups, which may be using the unrest to gain a foothold in the State. It can be nobody's case that AFSPA should remain or its ambit increased; but it is difficult to avoid the question whether, if at all AFSPA is needed for some more time, areas that have witnessed considerable violence in recent months should remain excluded.

Perhaps, the government's logic is that AFSPA is meant only to provide legal protection to forces engaged in counter-insurgency operations and not those engaged in law and order duty amidst internal conflict. However, the exclusion of the valley districts from AFSPA at this stage is liable to be interpreted as yet another instance of the government's partisan conduct. One of the reasons for the government maintaining the status quo on the extent of the 'disturbed areas' is that a detailed assessment of the ground situation is not possible at the moment when the security agencies are engaged in maintaining law and order. Further, the notification says the issue of declaring an area as 'disturbed' is quite sensitive and it may lead to public criticism and resistance. The only possible interpretation is that the fear of displeasing the majority Meitei seems to be the core aspect of the government's policy. In the backdrop of the hostility of the community towards the Assam Rifles, and the Assam Rifles' apprehension that trucks made to resemble its vehicles may be used to commit offences in a bid to tarnish its image, the situation is rife with possibilities of further conflict. The Centre should not delay any further a serious initiative to bring about reconciliation between the two communities, lest the situation fester and deteriorate.

## THE CAUVERY WATER CONUNDRUM

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

On September 21, the Supreme Court asked Karnataka to continue releasing 5,000 cubic feet per second (cusecs) of water from the Cauvery river to Tamil Nadu for 15 days, in line with decisions of the Cauvery Water Regulation Committee (CWRC) and the Cauvery Water Management Authority (CWMA). This has evoked a strong reaction from certain sections of Karnataka, an upper riparian State.

### **How has the public reacted?**

On September 22, the police arrested activists of the Federation of Karnataka Farmers' Associations in Mysuru as they tried to barge into the Mysuru Zilla Panchayat premises to gherao Urban Development Minister Byrathi Suresh. The next day, several shops and business establishments remained closed in Mandya. A coalition of farmers and Kannada organisations have called for a bandh in Bengaluru on September 26, where the CWRC is scheduled to meet and review the situation of water availability and release.

### **How is the Cauvery water being shared?**

The Cauvery Water Disputes Tribunal (CWDT)'s final award of 2007 and the Supreme Court's judgment of February 2018 spell out the system for sharing the river water and the institutional mechanisms for ensuring implementation of the judicial verdicts. Pointing out that 740 thousand million cubic feet (tmc ft) of water would be available in the Cauvery basin in a normal year, the Court, which broadly adhered to the CWDT's award, made the allocation for constituents of the basin as follows: Karnataka (284.75 tmc ft); Tamil Nadu (404.25 tmc ft); Kerala (30 tmc ft) and



Puducherry (7 tmc ft). Ten tmc ft and four tmc ft have been set apart for environmental protection and inevitable escapages into the sea.

Of Tamil Nadu's overall allocated quantity, Karnataka is to ensure 177.25 tmc ft, as per a monthly schedule, at Biligundulu, located on the inter-State border. Of this quantity, 123.14 tmc ft is to be given during the period from June to September, also marking the season of the southwest monsoon. Invariably, it is during this period that the Cauvery issue gets flared up, as the monsoon sometimes yields lower rainfall than anticipated.

The CWMA and its assisting body, CWRC, are in existence since June 2018 to oversee the implementation of the verdicts of the Tribunal and the Court.

#### **Why are Karnataka's farmers upset?**

This year's southwest monsoon has played truant, especially in south interior Karnataka, the region where the Cauvery river originates. Between June 1 and September 23, the region suffered a deficit rainfall of 27%, according to the India Meteorological Department. Kodagu of Karnataka and Wayanad of Kerala, which form part of the catchment of the Cauvery and its tributary, Kabini, registered a deficit rainfall of 43% and 56% respectively. Karnataka, in its application before Court, had stated that "...at the reservoir level, which covers a part of the catchment, the shortfall is 53.42%," given the fact that the State has four reservoirs in the Cauvery basin.

Last week, Karnataka told the Supreme Court that the daily flow of 5,000 cusecs of water to Tamil Nadu was "against [its] interest." The State, especially in urban areas like Bengaluru, was on "the brink of a drinking water crisis" whereas Tamil Nadu was in need of water for irrigation. It also added that the distress in Karnataka had increased in the past 15 days.

#### **How serious is the situation in T.N.?**

Being the lower-riparian State in the Cauvery basin, Tamil Nadu is mainly dependent on releases by Karnataka, particularly during the southwest monsoon, as it falls under the rain shadow region in the season. As per the data of the Central Water Commission available up to September 21, the State received 40.76 tmc ft, whereas it should have got 112.11 tmc ft in a normal year. Even after giving allowance for the failure of the monsoon and the quantum of shortfall as quoted by Karnataka, Tamil Nadu contends that it should have got at least 7.8 tmc ft more (as on September 12). It is in need of water for at least three lakh acres over which a short-term crop (kuruvai) has been raised. Already, there are reports of the crop being at risk of withering in many places.

However, the State will require, in the coming weeks, much more water for its long-term crop of 125-135 days (samba), which is normally raised over 15 lakh acres, providing livelihood opportunities to lakhs of landless labour. A substantial portion of the farming activity under the samba crop takes place during the northeast monsoon (October-December), which is much more unpredictable than the southwest. In addition to serving irrigation, the Cauvery is the main source of drinking water for several districts in the State.

#### **What is the way forward?**

It is time that the CWMA along with the constituents finalised a distress-sharing formula. There have been differences over the choice of parameters that determine such a formula.

Making use of the present crisis, the Authority should take the initiative in convincing all the stakeholders in evolving the proposed formula.



## DRAWING THE LINE

The year began on a calamitous note with reports that the temple town of Joshimath in the Chamoli district of Uttarakhand was ‘sinking’ and that cracks had appeared on residential and commercial structures. This prompted a humanitarian crisis with people fleeing and taking refuge in tents and open spaces, fearing that their homes would crumble. A proximate reason for the acceleration in the fissures and cracks was attributed to tunnelling activities from the Tapovan Vishnugad power project being developed by the National Thermal Power Corporation. There were also concerns on whether groundwater depletion, or increased urbanisation that encouraged faulty construction, had reached a point from which disasters had become inevitable. To address all these, the Uttarakhand State Disaster Management Authority had commissioned eight reputed institutions to study the land-subsidence phenomenon from multiple angles. Surprisingly, it banned the public dissemination of information from scientists involved with the institutions on the grounds that satellite imagery pictures — from Indian and international sources — of the subsurface in Uttarakhand were aggravating “panic” and that information was to be shared only after it was “cleared” by the Centre. The net result of this is that despite reports of all institutions being available for months, it took a strong rebuke from the High Court of Uttarakhand last week for the State authorities to make this information public.

Though these reports are technical, they reiterate what has been known about the risks underlying infrastructure development in Uttarakhand. The Central Building Research Institute, Roorkee, for instance, pointed out that 99% of construction in the region did not comply with the mandatory building codes. The National Institute of Hydrology, Roorkee, in its report, said that the network of springs, drainage systems and areas of subsidence may influence land subsidence and there was a need to monitor them. Overall, the tenuous geology made city-like infrastructure projects risky and strict town-planning and construction measures were necessary to minimise the risk from accidents and a loss of lives. While there is a legitimate case for ensuring that citizens in the hill States are not denied basic amenities and the opportunities for material advancement, it is incumbent upon governments to take hard decisions that are sustainable as against those that are aimed to score in the next election. A necessary step is in ensuring that information on the risks is widely disseminated and communicated in a way that it becomes a part and parcel of public life. Independent scientific counsel must form the backbone of policymaking and clear lines must be drawn around the limits to development in the region.

## DRAFT PATENT AMENDMENT RULES UNDERMINE PRE-GRANT OPPOSITION

The draft patent amendment rules made public on August 23 this year could hugely benefit big pharma but turn out to be disastrous for patients in India and in countries in the global South, which rely on generic drugs manufactured in India, in accessing affordable drugs and vaccines. The draft rules released by the Department for Promotion of Industry and Internal Trade for stakeholder comments have made a few significant changes that will create needless hurdles in pre-grant opposition of patents. The most important change is about granting the controller the power to determine the maintainability of representation by individuals or civil society organisations to file pre-grant oppositions.

“Pre-grant opposition is an important public health safeguard against patent evergreening and unmerited monopolies. It is one sure way to ensure that quality-assured and affordable generics remain accessible,” says Leena Menghaney, India Head and Global IP Advisor, Medecins Sans Frontieres – Access Campaign. But the amendment in the draft patent rules threatens the



safeguard against extending the duration of patent protection on completely frivolous grounds. Big pharma has lobbied for years to remove essential safeguards from India's patent laws. "The purpose of the draft amendment rules to pre-grant opposition is to knock out people whom they don't want [to challenge the granting of patents]. This is wrong. How will the controller decide the maintainability and on what basis? There is no guiding factor. This will create more problems," Anand Grover, senior advocate at the Supreme Court told The Hindu; Mr. Grover had represented the petitioners in the Bedaquiline pre-grant opposition. "Today there is no problem. Anyone can file a pre-grant opposition and the controller has to adjudicate on merit." Mr. Grover further added: "The [government] is favouring the companies, and pharma companies don't want pre-grant opposition. But since they can't do away with that, they are making the process difficult. They are introducing the maintainability criterion but there should be a rational basis. If the pre-grant opposition has grounds of pre-grant, then how is it not maintainable? The controller will decide on an arbitrary basis [about maintainability], which is wrong."

The draft rules on who is eligible to file a pre-grant opposition comes at a time when on September 13 this year Nandita Venkatesh from India and Phumeza Tisile from South Africa were listed in the Time magazine's 100 emerging leaders globally who are defining the next generation of leadership. The reason for being chosen in the select club: their stellar role in successfully thwarting Johnson & Johnson's attempt to extend the patent protection for its oral drug Bedaquiline through evergreening. Bedaquiline is a very important drug for treating multidrug-resistant TB. Both Nandita and Phumeza are TB survivors who lost their hearing due to the use of the highly toxic Kanamycin injection to treat MDR-TB. They both filed the pre-grant opposition along with Network of Maharashtra people living with HIV (NMP+). The duo was supported by Médecins Sans Frontières.

In March this year, the Indian Patent Office struck down J&J's evergreening attempts by ruling that making a derivative of quinoline in its salt form (fumarate) was obvious and did not involve any inventive step, and is therefore non-patentable. Currently, the Patents Act explicitly permits "any person" to file a pre-grant opposition without the discretion of the Controller. But as per the draft patent amendment rules, the maintainability of the petitioners who file a pre-grant opposition will not be automatic but will be determined by the Controller. While "any person" can currently file a pre-grant opposition, only interested persons can file a petition when it comes to opposing patents that have already been granted. "Bringing in maintainability of representation in pre-grant opposition will face the same fate as big pharma can always contest the Controller's decision regarding maintainability of petitioners," says Ms. Menghaney.

"Bringing in maintainability of representation in the pre-grant opposition will be the first major amendment to the Indian Patent Act. The provision of pre-grant opposition in the India Patent Act is unique in the world, the reason why big pharma has been opposed to it as they want continued control over the market and charge high prices for their products. Any weakening of the provision will be disastrous for patients as they will not be able to afford the high price of medicines and the generic drug industry will be affected too," says Dr Biswajit Dhar, Vice President, Council for Social Development.

There have been innumerable instances when pre-grant opposition filed by patient groups and civil society organisations have resulted in the rejection of patent protection extension sought by big pharma based on frivolous claims of "novel invention". For instance, in May 2006, in the case of Tenofovir disoproxil fumarate (TDF), a first line antiretroviral used for treatment of people living with HIV, the pre-grant opposition was filed against Sahara by the Indian Network of People Living with HIV/AIDS and the Delhi Network of Positive People. The pre-grant opposition was



based on the ground that the drug consists of a previously known compound. In another instance, Boehringer Ingelheim's patent application for its paediatric form of the anti-AIDS drug Nevirapine was rejected in 2008 based on a pre-grant opposition filed by socio-legal group Lawyers Collective on behalf of patients' groups in May 2006. Other high-profile attempts at evergreening that failed due to pre-grant opposition filed by patients' groups and civil society organisations include Glivec (imatinib mesylate), Zidovudine/Lamivudine (first line HIV medicines) and Lopinavir/Ritonavir (second line HIV medicines).

#### STS TRAIL NON-STS IN 81 HEALTH MEASURES: 2021 STUDY

In a recent study published in 'The Lancet Regional Health — Southeast Asia,' researchers provide a detailed analysis of the health, nutrition, and population trends of Scheduled Tribes (STs) from 2016 to 2021. Drawing from the National Family Health Surveys from 2016 and 2021, the authors contend that even though there is a noticeable improvement in the health and welfare metrics of STs, there are persistent disparities between the metrics of ST and non-ST populations, which demand urgent and consistent policy efforts.

The 2011 Census recorded over 104 million STs spread across 705 recognised ethnic groups. Even with targeted policies in place, STs, who make up 8.6% of India's population, face health and socioeconomic challenges. The study offers an overview of the performance metrics for STs, non-STs, and the overall population based on 129 parameters in 2021. It also highlights the contrast in the performance metrics of STs between 2016 and 2021, spotlighting areas of both progress and decline.

In 2021, the non-ST population outperformed the ST population in 81 out of 129 indicators. STs continued to face challenges, particularly concerning women's status and major public health issues such as child malnutrition, anaemia, insufficient vaccination coverage, and disparities in fertility and mortality rates. The 48 indicators on which STs surpassed non-STs include overall gender balance, gender balance at birth, use of family planning methods, consistent treatment during pregnancy, and adherence to recommended breastfeeding practices. Moreover, STs showed a reduced occurrence of diabetes and hypertension compared to non-STs.

The research divided the 129 indicators into 21 themes to evaluate the comparative performance of STs and non-STs in 2021.

Aside from the indicators focused on non-communicable diseases (NCDs) in adults, STs are at a disadvantage in almost all categories. The study says that the areas where they face greater vulnerability need dedicated policy efforts. The mortality rate for children under five in the ST community was alarmingly high, with 50 out of every 1,000 children not reaching their fifth birthday. Additionally, child malnutrition was a pressing issue, as more than 40% of ST children under five were stunted, with a similar percentage being underweight. The study also highlights new challenges for STs. For instance, from 2016 to 2021, there was a significant rise in high blood pressure levels among ST men and women aged 15–49, with increases of 7.5% and 8.9%, respectively.

Between 2016 and 2021, the ST population registered improvements in 83 of the selected 129 indicators. During these years, STs experienced major improvements in access to improved sanitation facilities (an increase of 30.4 percentage points between 2015–2016 and 2019–2021). Similarly, more births were being attended to by skilled health personnel (an increase of 13 points) and full vaccination coverage among children aged 12–23 months (an increase of 18.6



points). The civil registration of births among STs also increased from 76% in 2016 to 88% in 2021.

The study contends that India's progress on various policy metrics concerning population, health, and nutrition hinges on the ability of its marginalised groups, with the STs being a significant segment.

#### NEWLY MINTED NRF HAS A CHANCE TO BRIDGE INDIA'S SCIENCE, SOCIETY GAP

The National Research Foundation (NRF) is a new research funding agency that the Union Cabinet recently approved. It has a budget of ₹ 50,000 crore over five years and was set up to help boost research and innovation in India by providing more funding, streamlining the research funding process, and strengthening linkages between academia, industry, society, and government.

Following the announcement, there have been discussions among scientists around the kind of research that the NRF should fund such that the outcomes are innovative solutions to practical challenges. This is a difficult task due to an academic culture that is mainly directed by internal academic priorities and incentives, but not generally related to social problems and challenges.

#### Vannevar Bush's argument

One prominent narrative on funding rationales is that the 'relevance' and/or the 'utility' of research work should not matter. This has been echoed in the NRF debate, with some commentators arguing that, since scientific advancements often arise unexpectedly, research should not be prescriptive or directed. Other experts have highlighted the importance of forging ties between academic scholars and other key players within the science, technology, and innovation (STI) system. This includes liaison with line ministries and the relevant industrial sectors right from the inception of the problem statement. Finally, a few experts have emphasised the importance of including societal stakeholders in thinking about both the issues and research pathways that STI should address.

The first argument rests on the unpredictable and accidental nature of many discoveries and contends that – in the words of Vannevar Bush's 1945 advocacy paper 'Science: The Endless Frontier' – we ought to let "the free play of free intellects ... dictated by their curiosity" drive innovation.

This linear, or pipeline, model assumes that new knowledge will automatically lead to new technology and innovation, fuelling economic growth and addressing market gaps in knowledge creation. So the government should invest in scientific research because scientific breakthroughs will 'naturally' find their way into practical applications, via private sector innovation.

Many important technologies have benefited from discoveries driven by curiosity, including genome-sequencing, medical diagnostics, and several materials used in construction and various goods.

#### Sarewitz's counterargument

But this argument has long been challenged. In his 2016 essay 'Saving Science', Arizona State University professor of science and society Daniel Sarewitz wrote that many key inventions in postwar U.S. were the product less of curiosity and more of the technological demands of the Department of Defense (DOD). Sarewitz contended that the DOD's engagements with science



illustrated that the “free play of free intellects” was not the main path followed in most instances of innovation.

The DOD provided critical investment and direction for fundamental research in diverse fields, from physics to molecular biology. Its investments influenced the rapid development of computers in the 1950s, and nurtured the growth of computer science as an academic discipline by funding research in institutions such as the Massachusetts Institute of Technology and Stanford University.

This acceleration in turn paved the way for the World Wide Web, which later led – after similar guidance and material support from the U.S. National Science Foundation (NSF) – to companies such as Google.

### Revisiting the penicillin story

Even the narrative of the discovery of penicillin is less serendipitous than it is often depicted to be. In 1928, Alexander Fleming, a bacteriologist at St. Mary’s Hospital in London, unexpectedly observed that a mould, later identified as *Penicillium notatum*, had inhibited the growth of *Staphylococcus*, a bacterial genus responsible for ailments such as sore throat.

Fleming’s subsequent publication in the *British Journal of Experimental Pathology* in June 1929 only hinted at the potential therapeutic benefits of penicillin. Yet the actual substance was isolated by a team at the Sir William Dunn School of Pathology at the University of Oxford. Their target-driven endeavour from 1939, a decade after Fleming’s note, and subsequent industrial involvement in its production is what transformed penicillin into the life-saving drug it is today. Similarly, military foresight pushed for the first jet engines, which went on to transform civil and commercial aviation.

Many pieces of modern technology owe their existence to government-led innovations, as the economist Mariana Mazzucato has argued in her book *The Entrepreneurial State* (2011). This is to say that the ‘free play of intellects’ is a romantic notion that is not borne out in a closer reading of the history of science.

### More realistic models of innovation

A new innovation model emerged in the 1980s called the ‘national innovation system’. This model is based on the idea that innovation to create a flourishing country requires the fostering of connections, promoting learning within systems and empowering entrepreneurship. Countries like Japan and South Korea owe their innovation-led economic growth to the successful implementation of an interconnected innovation system, e.g. between automobiles companies and part suppliers, even though their basic science was not particularly strong in the 1970s-80s.

In the STI domain, these two frameworks to support science have historically governed the policy discourses of funding agencies worldwide: the pipeline model rooted in the post-war era, emphasising the role of basic research and assuming automatic translation to innovation and economic growth, and the techno-nationalist system from the 1980s, focused on building interconnectedness among universities, research institutes, companies and governments.

Now, a third innovation model, focusing on transformative change towards sustainability is emerging: there is consensus across countries spanning various levels of economic development that STI shouldn’t only foster growth, but that it also needs to transform society to make it environmentally and socially sustainable. To achieve this, citizen science and stakeholders



participation help in informing science regarding the types of knowledge that can transform society towards sustainability.

Wind power in Denmark offers an example of the third model. In the face of the energy crises of the 1970s, Denmark's grassroots environmental movement created local cooperatives and small firms that experimented with wind turbines, with support from national technological institutes and policies (feed-in tariffs). This coalition eventually led Denmark to become one of the leading exporters of wind-turbines, contributing to its transition to green energy.

Historically, research funding by Indian agencies has preferred the pipeline model, allowing 'free intellects' to guide national progress in STI. The formation of the NRF now gives the country the opportunity to revisit its STI policies. While support to basic research is always an important part of the science policy-mix, there is now the opportunity to revisit our affiliation with the pipeline model and chart the way towards the newer models of innovation. These emphasise the importance of creativity led by social challenges and stakeholder participation to achieve transformative innovation towards a more just and sustainable future.

## NIPAH VIRUS OUTBREAK: WHAT ARE MONOCLONAL ANTIBODIES?

### The story so far:

Last week, India reached out to Australia to procure monoclonal antibody doses to combat the Nipah virus outbreak in Kerala. India is expecting 20 more doses soon, Indian Council of Medical Research (ICMR) head Dr. Rajiv Bahl has said.

The virus has killed two people so far and has infected at least five others in the Kozhikode district. The current Nipah outbreak is Kerala's fourth since 2018.

India currently has the antibody doses available for ten persons only. Addressing the press, Dr. Bahl said that no one in the country has been administered the dosage so far since it needs to be given at an early stage of infection.

### What is a monoclonal antibody?

Monoclonal antibodies are laboratory-made proteins that mimic the behaviour of antibodies produced by the immune system to protect against diseases and foreign substances.

An antibody attaches itself to an antigen – a foreign substance, usually a disease-causing molecule – and helps the immune system eliminate it from the body.

Monoclonal antibodies are specifically designed to target certain antigens.

Niels K. Jerne, Georges J.F. Köhler and César Milstein were awarded the medicine Nobel Prize in 1984 for their work on the "the principle for production of monoclonal antibodies".

### What is m102.4?

According to research published in The Lancet journal of Infectious Diseases, m102.4 is a "potent, fully human" monoclonal antibody that neutralises Hendra and Nipah viruses, both outside and inside of living organisms. The antibody has passed phase-one clinical trials — which means that researchers tested it with a relatively small number of people to estimate the right dose of treatment that also doesn't cause side effects.





As of now, the drug is used on a ‘compassionate use’ basis — a treatment option that allows the use of an unauthorised medicine under strict conditions among people where no other alternative and/or satisfactory authorised treatment is known to be possible and where patients cannot enter clinical trials for various reasons.

The m102.4 monoclonal antibody was first developed by Dr. Christopher Broder and his team at the Uniformed Services University of the Health Sciences (USU) in Bethesda, Maryland, with help from the U.S. National Institutes of Health (NIH).

#### **How do monoclonal antibodies work?**

Monoclonal antibodies are specifically engineered and generated to target a disease. They are meant to attach themselves to the specific disease-causing antigen. An antigen is most likely to be a protein.

For instance, most successful monoclonal antibodies during the pandemic were engineered to bind to the spike protein of the SARS-CoV-2 virus. The binding prevented the protein from exercising its regular functions, including its ability to infect other cells.

Dr. Köhler and Dr. Milstein, who established a generation of monoclonal antibodies for use in humans in 1975, used this principle to describe the hybridoma – a fusion cell made up of B cells (white blood cells that produce antibodies) and myeloma cells (abnormal plasma cells). These hybrid cells allowed the researchers to produce a single antibody clone, which came to be known as a monoclonal antibody.

The initial technology of producing hybridoma in mice was unsustainable. Today, these antibodies are made using recombinant DNA technology. Here, the gene that codes for the monoclonal antibody’s binding region — also known as the variable region — is isolated from a B cell or synthesised in the laboratory. This antibody is then introduced into a host cell, often a bacterium or a mammalian cell, using recombinant DNA technology (which involves manipulating DNA material outside an organism to obtain specific traits or characteristics). The host cells, called bioreactors, produce large quantities of the monoclonal antibodies which are extracted, purified, and readied for use as desired.

Glycoproteins are one of the major components of viruses that cause diseases in humans. According to a research paper published in October 2020, the m102.4 monoclonal antibody binds itself to the immunodominant receptor-binding glycoprotein of the Nipah virus, potentially neutralising it.

#### **Phase one clinical trial**

The results of a successful clinical safety trial conducted with 40 volunteers between March 2015 and June 2016, for monoclonal antibody m102.4, were published in 2020. Led by Geoffery Playford of Princess Alexandra Hospital in Brisbane, Australia, it was the first in-human, randomised, controlled phase-one study of the safety, tolerability, and immunogenicity of m102.4.

The study was double blind, which means neither the participants nor the researchers knew who received the antibody and who received the placebo. The researchers created eight cohorts of five participants each. In each cohort, six people were randomly administered m102.4 of varying doses, while the remaining two received the placebo.



The most common treatment-related side-effect was headache, reported by 12 of 30 participants in the combined m102.4 group, and three from the pooled placebo group. No deaths or severe effects, which could have caused the study to be discontinued, were noted.

The results of the trial showed that single and repeated doses of m102.4 were well-tolerated and safe, and invoked no adverse responses from the immune systems of participants.

The monoclonal antibody m102.4 for Dr. Playford's clinical trial was manufactured by the Australian Institute for Bioengineering and Nanotechnology (AIBN) at the University of Queensland.

### **Regulatory status**

In his press conference, ICMR chief Dr. Bahl mentioned that "no opportunity presented itself to take the research forward" after the first phase of trial.

According to the Queensland Health Department, the antibody has been available in Queensland State since 2010 to treat Hendra virus infections, and has been shared by USU and the Henry M. Jackson Foundation for the Advancement of Military Medicine.

As of 2020, it had been administered to 13 people on compassionate grounds in Queensland. Hendra virus is on the World Health Organisation's list of priority diseases requiring urgent attention for research and development of therapeutics — as is the Nipah virus.

Both Hendra and Nipah viruses are bat-borne Paramyxoviridae – a family of viruses that contain a single-strand RNA of negative-sense genome, similar to the ones that cause diseases like measles, influenza etc., and replicate within infected cells.

## **AT LEAST 100 MILLION IN INDIA NEED SPECTACLES BUT HAVE NO ACCESS**

In February this year the World Health Assembly, in its meeting, resolved to implement an "integrated people-centred eye care" project.

According to the WHO at least 2.2 billion people function with compromised eyesight and at least a billion of these were preventable with access to eye care. Around 90% of those with vision impairment or blindness live in low- and middle-income countries.

While vision impairment led to an estimated productive loss of US \$ 410.7 billion globally, ensuring access to eye care and treatment for all would cost an estimated US \$ 24.8 billion, the WHO fact sheet states. Mr. Naidoo recalled that in the early 2000s when the idea was discussed with WHO officials, it was "believed that it wasn't something that needed to be integrated into the calculation of vision impairment and blindness," he said at the inaugural of the three-day fourth international conference on 'Eye health in a changing world' organised by the India Vision Institute, a non-governmental organisation. Alexandre Montague, global CEO of Hoya Vision Care, which sponsored the conference said a researcher in a Shanghai hospital, nearly a fortnight ago, told him "that within the last 20 years the average onset of myopia (inability to see distant objects clearly) in China moved from 10.5 years to 7.5 years. Within 20 years myopia onset moved up by three years. The data shows that 50% of the population would be myopic by 2050."

In India, where over 100 million people may not have access to eye care and glasses, it is imperative to take measures, said out Vinod Daniel, chief executive officer of IVI. Once the country adopts the WHO's Specs 2030 everything will change, he said. "We are excited with the



programme as the biggest change is the reporting of numbers once the WHO assembly adopts it. From a government perspective they did not have to report the number of people who have received spectacles just as they now report the number of cataracts,” he said.

It is this requirement that the country must ensure better sight for all the diagnosed persons within six years that Hoya proposes to address. The company, which had its genesis in Hoya, a town to the west of Tokyo, Japan, has inaugurated a facility in Sriperumbudur around 50 km from Chennai to create spectacles.

Mr. Montague says the aim is to educate people on the need to wear glasses, and improve the quality of eye care as well. “India has been identified as one of our strategic markets and there is a huge amount of value we can bring to the market. We are very happy with the infrastructure, access to electricity, water and quality of eye care professionals here (in Chennai),” he said. The company had set up a facility earlier but shut down nearly 10 years ago.

He said the plan is to identify children who could progress to myopia and arrest the progression, working with optometrists to identify children who can be provided spectacles.

Rajeev Prasad, President, Asia Pacific Council of Optometry, pointed out that with just 26,000 registered ophthalmologists in India the job falls on optometrists to provide the necessary intervention.

The need for intervention must begin early, the optometrist said. Earlier five to eight percent of children had vision problems it rose to 25% post-COVID. “Our own thinking has changed. Earlier we asked children to maintain a 10 ft distance to watch TV. Now, post-COVID we are buying gadgets for children for online classes. We are trying to make sure with the help of our partner that children do not go unnoticed, undetected and uncorrected,” he said.

East and South Asian countries such as Taiwan, Korea, China, Singapore and Japan have been seeing a significant increase in myopia. “Every second person wears glasses. That is where WHO comes into the picture. It is predicted that half of the world population will wear glasses,” he said.

**GUJARAT TURNS OVER NEW LEAF, BANS INVASIVE TREE SPECIES: ‘ADVERSE IMPACT’**

FROM THE Sabarmati riverfront in Ahmedabad to the Ram Van “urban forest” in Rajkot, rows of Conocarpus trees, an exotic mangrove species, have been planted by the local administration in Gujarat over the last few years. But, the state government has now banned its “plantation in forest or non-forest area”, underlining its “adverse impacts on environment and human health”.

In a circular issued on Tuesday, the principal chief conservator of forests and head of forest force, S K Chaturvedi, emphasised the need to control the growth of “exotic species Conocarpus”.

Earlier, Telangana had also banned the plant species, which is widely used in public spaces for its ornamental looks but is known to have adverse effects on the local biodiversity.

“Research reports have highlighted adverse impacts/ disadvantages of this species on environment and human health... Trees of this species flower in winter and spread pollen in nearby areas. It is learnt that this is causing diseases like cold, cough, asthma, allergy etc,” Chaturvedi said in the circular .

Conocarpus is an evergreen species with dark-green shiny leaves. It is a fast-growing species which is reported to be not palatable to wild herbivores or domesticated animals.



“Roots of this species go deep inside the soil and develop extensively, damaging telecommunication lines, drainage lines and freshwater systems,” he said. “Keeping the above facts in mind, nursing of any Conocarpus plant in the departmental plant nurseries and Van Mahotsav nurseries, as well as their plantation in forest area or non-forest area is hereby prohibited,” he said.

The forest department has also been directed to raise public awareness about its “adverse impacts” through events like “farmer workshops, nature education camps”.

From beautification of public spaces to residential societies and factories, Conocarpus trees have been the popular choice in recent years, and are a common sight across Gujarat’s cities. They are being grown as trees lining public roads as well as hedges along walkways in gardens and are amenable to be trimmed into various shapes.

In Rajkot, it is the most visible species in Ram Van, an urban forest developed by the Rajkot Municipal Corporation (RMC) at a cost of Rs 13.77 crore. According to officials, of the total 80,000 saplings planted in the area, about 7,000 were Conocarpus.

“We planted Conocarpus on the boundary of the park to create a hedge. We also planted it as a decorative hedge lining the walkways,” said Laxmansinh Chauhan, RMC’s director in charge of parks and gardens. “The land on which Ram Van has been developed is rocky and native species like the Gum Arabic tree and Jujube don’t grow easily. Therefore, we were advised to plant Conocarpus,” he said.

In Vadodara, the municipal corporation has planted about 25,000 Conocarpus saplings. “For over two months, we have started pruning them to restrict their growth... They have been shortened to about five feet, as uprooting them completely is a challenge,” said Mangesh Jaiswal, director of parks and gardens, Vadodara Municipal Corporation.

In Ahmedabad, Conocarpus saplings were first planted along the Sabarmati riverfront in 2016-17. The species is now seen in many other areas of the city, including along a wall near the airport that hides a slum area.

“We have stopped new plantation and will prune the existing plants. But we are not uprooting these for now,” said Jignesh Patel, director in charge of parks and gardens, Ahmedabad Municipal Corporation.

Asked about the high water absorption by the species, Patel said pruning the plants would control the water requirement too. “Most of the private premises prefer Conocarpus because of its fast growth, density and appearance. Most of the party venues in and around the city have used this as a wall,” he said.

Meanwhile, welcoming the forest department’s decision, Professor Padamnabhi Nagar, an associate professor with the botany department of M S University of Baroda, said Conocarpus has no role in the local ecosystem. “Our wildlife will not respond to Conocarpus as it is not a native species,” said Nagar, adding that there are many native plant species which are viable options.

Some forest officers said the species may not be harmful if planted in certain areas “Conocarpus is a hardy mangrove species which grows easily, from inter-tidal zones to deserts to urban landscapes. It stores a lot of carbon. It does suck in a lot of soil moisture, but that is true for all fast-growing species... As it is an exotic species, wildlife may not find it useful. However, it may not be a bad idea to plant Conocarpus in waterlogged areas,” said a forest officer.



## SWAMINATHAN WALKED AHEAD OF HIS TIME: SCIENTIFIC COMMUNITY

Indian agriculture scientists and policymakers remember M.S. Swaminathan as someone who walked ahead of time not just as a scientist, researcher, and academic but also as a visionary administrator. The community believes that developing high-yielding Basmati rice varieties, innovatively using the technology of mutation for various crops, application of genetics for increasing production and food security and launching programmes such as “lab to land” were his major contributions to the agriculture sector.

Former Director-General of the Indian Council of Agricultural Research (ICAR) Trilochan Mohapatra remembers Dr. Swaminathan as an encouraging teacher and strong administrator. “He was our professor at the Indian Agricultural Research Institute. He minced no words to encourage us. When we successfully organised a congregation of scientists, he wrote a letter to then Director of IARI congratulating us as ‘students who take pride in perfection’. I had met him last on his birthday in August. In all our meetings, he would passionately talk about research and findings in the field of agriculture, which was so inspiring,” Professor Mohapatra said.

Nutritional quality through mutation of crops, bio-fortification, funding States to promote agriculture, precision farming, advocacy through National Academy of Agricultural Sciences and establishment of a Central Institute for Women in Agriculture were all his pet projects, Professor Mohapatra said.

He remembers insightful papers by Dr. Swaminathan on his doctoral research work in the science of potato in the Nature journal which is still considered seminal. “He joined the Central Rice Research Institute in Cuttack when he came back to India after his research. He always had a special consideration for this institute,” Professor Mohapatra said. “His stamp is visible in ICAR, IARI and all other national agriculture science institutions,” he said.

Chairman of the Punjab Farmers Commission and eminent agro-economist Sukhpal Singh said it was under Dr. Swaminathan’s leadership that efforts were launched at the International Rice Research Institute (IRRI) to cultivate rice with C4 carbon fixation capabilities, enabling improved photosynthesis and water utilisation. “Dr. Swaminathan also contributed to developing the world’s first high-yielding basmati rice,” Professor Sukhpal said, adding that his incomparable contribution in improving agricultural production by developing high-yielding crop varieties and modern technologies would always be remembered by the country, especially by the farmers of Punjab.

IARI Director A.K. Singh said in a statement that in the passing of Dr. Swaminathan ends an era of agricultural research, education and extension that was full of disruptive innovation. “If God appears to poor and hungry in form of bread as said by Mahatma Gandhi, that God is Dr. Swaminathan who should be worshipped by every citizen while taking daily meals,” Professor Singh said.

Describing Dr. Swaminathan’s dedication to the welfare of farmers as unwavering, Sanjay Deshmukh, Professor of Life Sciences and former Vice-Chancellor of the University of Mumbai, said the scientist championed the farmers’ cause, advocating for fair prices, access to technology, and social justice within the agricultural landscape. His work was a testament to his commitment to improving the lives of those who toiled on the land. His farmer-centric approaches resonated far beyond India’s borders, serving as an inspiration to agricultural communities worldwide, he said.



## INDIA IS RUNNING OUT OF PHOSPHORUS; DOES THE ANSWER LIE IN OUR SEWAGE?

A handful of countries control most of the world's reserves of phosphorus. This is a major geopolitical concern. The world's largest reserves are in Morocco and the Western Sahara region. But here, phosphorus coexists with cadmium, a toxic heavy metal

The problem with the fertilisation of land is as old as agriculture itself. When early humans first began to engage in settled agriculture, they quickly realised that while crops require nutrients for their growth, repeated cycles of cultivation and harvest depleted these nutrients, reducing yield over time. Early agricultural societies began to notice that certain areas produced better crops and that soils could be replenished.

This observation led to practices to restore essential nutrients in the soil necessary for plant and crop growth. Indigenous communities around the world developed methods of fertilisation, for example, using fish remnants and bird droppings (guano) as fertilisers.

This changed in the 19th century, which saw significant advancements in chemistry, leading to the creation of synthetic fertilisers as well as the identification of nitrogen, phosphorus, and potassium. They're the foundation of modern synthetic chemical fertilisers and have caused agricultural productivity to boom. The Green Revolution of the mid-20th century accelerated the adoption of high-yield crop varieties and intensive use of these fertilisers, and today these substances are crucial to sustain global food production.

But we now have a problem. Phosphorus is scarce and exists only in limited quantities, in certain geological formations. Not only are we running out of it, it also pollutes the environment. It doesn't exist as a gas, which means it can only move from land to water, where it leads to algal blooms and eutrophication.

### **Geopolitics and phosphorus**

The history of phosphorus spans its discovery in guano to current global supply chains. Today, a handful of countries control most of the world's reserves of phosphorus. This is a major geopolitical concern. The world's largest reserves are in Morocco and the Western Sahara region. But here, phosphorus coexists with cadmium, a heavy metal that can accumulate in animal and human kidneys when ingested. Removing cadmium is also an expensive process.

As a result, cadmium-laden fertilisers are often applied to the soil, absorbed by crops, and consumed, bioaccumulating in our bodies. Studies have found that this accelerates heart disease. In 2018, the EU passed new legislation to regulate cadmium levels in fertilisers.

Only six countries have substantial cadmium-free phosphorous reserves. Of them, China restricted exports in 2020 and many EU countries no longer buy from Russia. So the market for safe phosphorus has suddenly exploded. This is one reason why Sri Lanka banned the import of synthetic fertilisers and went organic in 2021, later experiencing a sudden drop in crop yield that precipitated a political crisis.

Today, India is the world's largest importer of phosphorus, most of it from the cadmium-laden deposits of West Africa. Not all crops absorb cadmium at the same rate, but paddy, a staple crop in India, is particularly susceptible; Indian farmers also apply a lot of fertilisers to paddy. Other grains, such as wheat, barley, and maize also absorb cadmium, just less.



(The uptake of cadmium by crops varies based on soil quality, climatic conditions, and the type and variety of crops grown. Social and cultural factors further affect the intake of cadmium into human bodies and the severity of health effects.)

Thus, we may face a hard choice down the line: if we do not remove cadmium from the phosphorus, we may face a public health crisis; if we do, fertilisers will become more expensive.

#### AS ILLICIT TRADE BOOMS, SEIZURE MOUNT: 3.5 TONNES OF GOLD, 18 CRORE CIGARETTE STICKS AND 90 TONNES OF HEROIN CAUGHT IN FY23

Around 3.5 tonnes of gold, 18 crore cigarette sticks, 140 metric tonnes of red sanders and 90 tonnes of heroin were seized along with other drugs during the last financial year. Central Board of Indirect Taxes and Customs Chairman Sanjay Kumar Agarwal on Thursday (September 28) said the challenge of illicit trade looms larger than before and tackling issues such as counterfeiting, smuggling and tax evasion is fundamental to safeguarding India's economic stability.

As per a report released by FICCI CASCADE on Thursday titled 'Hidden Streams: Linkages Between Illicit Markets, Financial Flows, Organised Crime and Terrorism', the illegal economy in India has an overall score of 6.3 in India, which is higher than the average score of 5 of other 122 countries. In the organised crime segment, India has a lower score of 4.3 against 5.2 for an average of 122 countries.

The report has inputs from multiple sources, including government data. It stated that although there are fewer criminal actors, they are widespread and engage in a variety of unlawful activities – such as drug and human trafficking and the illegal trade in wildlife products – mainly due to the efficacy of criminal networks in India. These networks have enabled them to generate substantial illicit financial flows, despite their small numbers.

#### We explain some of the key findings:

**Illicit Financial Flows – Value Gap India (2009-2018):** India has faced an approximate total potential revenue loss of US \$13 billion involving both misinvoiced imports and exports. The situation was worsened by a financial loss of \$9 billion resulting from the practices of import mis-invoicing. The uncollected value-added tax (VAT) amounted to a total of \$3.4 billion.

The projected amount for customs charges is approximately \$2 billion, while the anticipated sum for corporate income tax is forecast to be \$3.6 billion. For the 2009-2018 period, the total aggregate value gap of mis-invoicing was over \$674.9 billion. In 2018, India had a value gap of US \$84.9 billion. The value gaps as the percentage of the trade, however, declined marginally.

**Terror and Crime in India: Economic Impact of Violence for India (Billions PPP):** Dealing with both terrorism and crime has gained significant attention due to the growing emphasis on security concerns and this has resulted in a considerable economic cost. In 2021, India's economic cost for violence was at US \$1170 billion at purchasing power parity (PPP) (Chart 2), which accounts for approximately 6% of the country's GDP and violence per capita impact is estimated at US \$841 at PPP.

The report stated that nearly 80% of such containment costs relates to security and as the economy grows (along with it the illegal economy), India's cost of addressing terror and crime will be significant.



Organised Crime and Illegal Economy in India: Citing data from The Global Organised Crime Index (2021), the FICCI report said India's benchmarking with 122 countries shows that the aggregate score of organised crime actors in India is low, at 4.3 on a scale of 1-10, compared to the average benchmark of 5.2 for 122 countries.

The criminal network, however, has a significant influence in India with a score of 6, which is higher than the average score of 5.8 for 122 countries. This is due to criminal networks having a significant role in India's organised crime scenario, with a widespread presence across the country involved in a variety of illicit activities including drug and human trafficking and the illegal trade in wildlife products.

On the other hand, the illegal economy in India has an overall score of 6.3 (Chart 3(2)), which is higher than the average score of 5 of 122 countries.

"This suggests that although there are fewer criminal actors, they are widespread and engage in a variety of unlawful activities, including drug and human trafficking and the illegal trade in wildlife products. This apparent contradiction may be attributable to the efficacy of criminal networks in India, which enables them to generate substantial illicit financial flows despite their small numbers," the report said.

**Drug Economy in India:** India's location near major drug-producing regions, including the **Golden Triangle (Myanmar, Laos, and Thailand)** and the **Golden Crescent (Afghanistan, Pakistan, and Iran)** has been associated with activities that may involve the transportation and distribution of controlled substances. There has been an increase in the illicit drug trade in India in recent years, with the FICCI report stating that 3,172 cases of drug seizures were recorded during 2014-2022 as against 1,257 cases in 2006-2013.

Total 4,888 arrests were made during the same period for these seizures involving 3.33 lakh kg of drugs worth Rs 20,000 crore.

Among the various kinds of drugs, Cannabis has a higher score of 7.5, compared to the benchmark average of 5.4, indicating its significant presence in India in comparison to other countries. The synthetic drug trade and the heroin trade both had scores of 6.5, which exceeded the benchmark averages of 5.3 and 4.6, respectively.

## IDENTITY PANGS

In an innocuously titled report on "Decentralized Finance and Digital Assets" released last Saturday, global rating major Moody's Investors Service has flagged some uncomfortable home truths about India's ambitious digital identification (ID) programme for residents, Aadhaar. As the world's largest digital ID programme with biometric and demographic details of over a billion residents, Aadhaar stands out for its scale. But at a broader level, the agency has red-flagged security and privacy risks from "centralised" digital ID systems such as Aadhaar, where a single entity controls identifying credentials. Moody's, which has mooted decentralised ID systems that give users more control over their data, has also lent weight to worries about the efficacy of Aadhaar's biometric-based authentication systems to verify identities. "The system often results in service denials, and the reliability of biometric technologies, especially for manual labourers in hot, humid climates, is questionable," it said. While this observation is of relevance amid the government's push to switch all payments under the Mahatma Gandhi National Rural





Employment Guarantee Act (MGNREGA) to an Aadhaar-based payment system, it echoes the concerns raised ever since its launch under the United Progressive Alliance regime.

The vigorous pursuit of Aadhaar, after some initial hesitation, under the present government has manifested in the 12-digit number becoming mandatory for almost all welfare benefits to weaker sections as well as activities such as opening bank or provident fund accounts, securing telephone connections and remitting taxes. Its use, backed by the expansion of access to no-frills bank accounts and mobile phone connections, has indeed enabled the direct transfer of benefits to millions in welfare schemes and weeding out ghosts and middlemen. Yet, there have also been instances of people being excluded from basic services for lack of an Aadhaar or labourers and senior citizens struggling to confirm their fingerprints and retina scans to prove they exist. An audit of the Unique Identification Authority of India (UIDAI) by the Comptroller and Auditor General of India released last year, had flagged lapses that jeopardise privacy and compromise data security, along with flaws in enrolment processes leading to duplication and faulty biometrics. India has pushed for digital public infrastructure like the one built around the edifice of Aadhaar, as a means for service delivery in G-20 nations and beyond. Having appointed a part-time chief to the UIDAI last month after four years, the government must seek an honest review of, and course correction in the Aadhaar programme, before expanding its linkages further, be it for electoral rolls, private entities or MGNREGA payments.

#### MGNREGS SOCIAL AUDIT UNIT IN A STATE OF PARALYSIS IN MANY STATES

An enduring criticism against the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is its alleged high rate of corruption. But the scheme's inbuilt mechanism to combat it, the social audit units meant to detect any cases of malpractice, seems to have failed.

As per the statistics available with the Union Rural Development Ministry in the ongoing financial year, less than 14% of the amount flagged by the auditors has been recovered so far.

The figures for the previous financial years are equally dismal.

##### **Poor recovery**

In the ongoing financial year, the social audit units have flagged misappropriation of ₹27.5 crore. After action was taken in some of these cases, the amount came down to ₹9.5 crore out of which only ₹1.31 crore has been recovered so far, a mere 13.8% of the total.

The financial year 2022-23 has a similar story; after taking rectifying measures, the recoverable amount was pegged at ₹86.2 crore but the recovery amounted to only ₹18 crore, just 20.8% of the total. In 2021-22, one of the social audit units flagged one of the highest amounts of misappropriation at ₹171 crore but only ₹26 crore, 15% of the total, was recovered.

##### **Fund-starved units**

Section 17 of the Act governing the scheme says that the gram sabha "shall monitor the execution of works". Each State has social audit units that are supposed to work independently of the implementing authorities.

To take stock of the situation, the Ministry on Tuesday held a seminar for the social audit units from the States, MGNREGA commissioners, civil society, and other stakeholders.



A bleak picture emerged at the seminar, of fund-starved social audit units, working without training or adequate personnel. The social audit unit's sole responsibility is to flag cases of malpractice. Recovering the money, and reprimanding the officials responsible, is up to the State governments.

A dismal recovery rate threatens the credibility of the audit process since it makes the entire exercise futile, said Rakshita Swamy, Social Accountability Forum for Action and Research (SAFAR), who attended the seminar.

"The Union government has weaponised the lack of social audits to withhold funds for MGNREGS for the States. But the Ministry, which directly funds the social audit units so that they are able to maintain their independence from the States, is not getting funds to them in time. For example, units in Karnataka and Bihar have not got funds for nearly two years now," she added.

Over the past three years, there has been a consistent trend of the same States reporting "zero number of cases" and making "zero recoveries".

The BJP-ruled States of Gujarat and Goa, the northeastern State of Meghalaya, and the Union Territories of Puducherry and Ladakh have been on this list for all three of those years.

There are other States such as Telangana, where an active social audit unit has flagged several cases, but the recovery rate remains low.

For example, in the ongoing financial year, ₹6.6 crore was flagged by the auditors to be recovered; so far, only a measly ₹2,087 has actually been recovered.

#### **No cases or no money**

"We welcome the vigilance by the Centre and their pressure on the States to recover the misappropriated money. But the States that identify several cases of misappropriation are taken to task for not making the recovery. Worse than these States are those that show no cases at all. Which clearly means, there is no monitoring here," said Nikhil Dey, founder member of the Mazdoor Kisan Shakti Sangathan, who also attended the seminar.

## WHAT ARE THE FINDINGS OF THE PARLIAMENT PANEL ON NEP?

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

The Parliament Standing Committee on Education, headed by Bharatiya Janata Party (BJP) MP Vivek Thakur, tabled a report during the special session of Parliament on the "Implementation of the National Education Policy (NEP), 2020 in Higher Education."

### **What did the report say?**

The report looked at the salient features of the NEP's implementation in the higher education sector and the progress made so far. The panel met representatives of various State governments, Union Ministries, higher education institutions and other stakeholders to prepare the report. The report noted that of the 1,043 universities functioning in the country, 70% are under the State Act and that 94% of students are in State or private institutions with just 6% of students in Central higher educational institutions, stressing the importance of States in providing higher education.

### **What were the issues discussed?**



The 31-member panel tried to discuss issues such as the rigid separation of disciplines, limited access to higher education in socio-economically disadvantaged areas, lack of higher education institutes (HEIs) that teach in local languages, the limited number of faculty, lack of institutional autonomy, lesser emphasis on research, ineffective regulatory system and low standards of undergraduate education. The panel said that by 2030, every district in the country should have at least one multidisciplinary HEI and that the Gross Enrolment Ratio in higher education, including vocational education, should be increased from 26.3% in 2018 to 50% by 2035.

#### **What were the recommendations?**

The panel asked the Union Government and the State Governments to take actions such as earmarking suitable funds for the education of Socially and Economically Disadvantaged Groups (SEDGs), setting clear targets for higher Gross Enrolment Ratio for SEDGs, enhancing gender balance in admissions to HEIs, providing more financial assistance and scholarships to SEDGs in both public and private HEIs, making admission processes and curriculum more inclusive, increasing employability potential of higher education programmes and for developing more degree courses taught in regional languages and bilingually. The panel also recommended specific infrastructural steps to help physically challenged students and a strict enforcement of all no-discrimination and anti-harassment rules.

The Committee appreciated the manner in which the NEP was implemented in Jammu and Kashmir. It said that the Union Territory was among the first in the country to implement NEP from the academic session 2022 in all its higher educational institutions. The panel said it witnessed a paradigm shift in the methods of teaching, leading to lifelong learning opportunities to students.

#### **What about funding?**

The Committee suggested improving the effectiveness and impact of the Higher Education Financing Agency (HEFA) in funding HEIs. It asked the HEFA to diversify its funding sources beyond government allocations and explore partnerships with private sector organisations, philanthropic foundations, and international financial institutions. It recommended reviewing and adjusting the interest rates on loans provided by HEFA “to make them more competitive and affordable” for HEIs.

#### **What about the multiple entry multiple exit programme?**

The panel said that Indian institutions were likely to face several issues in implementing the multiple entry and multiple exit (MEME) system. The panel said while the MEME looked like a flexible system, which was being operated by Western educational institutions effectively, it might not work well in the country. “If institutions allow MEME, it would be very difficult for the institutions to predict how many students would exit and how many would join midway. Since institutions would not know the in- and out-traffic, it will certainly disturb the pupil-teacher ratio,” the report noted.

OVER 60% URBAN KIDS SPEND 3 HOURS DAILY ON ENTERTAINMENT APPS

After the COVID-19 period, as children returned to school and face-to-face teaching recommenced, there was an upswing in the use of the Internet for leisure. A recent survey by LocalCircles indicates that urban Indian youngsters spend more and more time listening to music, viewing clips, maintaining social connections, and playing games on the Internet. This trend has given rise

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



to a growing addiction to electronic gadgets among children aged 9 to 18. This addiction, in some instances, has manifested as impatience, aggression, concentration problems, memory issues, headaches, eye and back discomfort, stress, communication difficulties, lethargy, and even depression. In many cases, parents reported that they are unaware of the apps that their children use.

The nationwide survey aimed to grasp the primary concerns parents had regarding their children's prolonged usage of social media, OTT, and online gaming platforms. Additionally, it sought parents' views on the necessity of parental permission for accessing these platforms. The survey gathered feedback from over 46,000 urban Indian parents spanning 296 districts in India. Of these respondents, 62% were male and 38% were female. Respondents were from districts across tiers, with 47% from tier 1, 35% from tier 2, and 18% from tiers 3 and 4.

The survey asked about the daily Internet consumption of children aged 9-17 concerning social media, videos/OTT, and online gaming. Of the 11,507 replies received, 61% of urban Indian parents indicated that their children devoted an average of 3 hours or longer each day to these pursuits. To break it down, 39% said that their children used gadgets for 1-3 hours daily, 46% said 3-6 hours, and 15% said over 6 hours. Importantly, no participants said that their children abstained from such online activities.

The survey also explored which online platforms children aged 9-17 were most engaged with. Of the 12,017 respondents, some indicated that their children were addicted to multiple mediums. In total, 37% highlighted that their children mostly watched videos/OTT (such as YouTube, Prime Video, Netflix, Hotstar), 35% pointed to social media platforms (such as Instagram, WhatsApp, Snapchat, Be Real), and 33% identified online gaming (including Minecraft, PUBG, Fortnite, Among Us, FIFA, Fantasy Sports). Additionally, 10% selected "other online activities," while 2% were not sure. A small proportion (8%) of respondents said that their children were not addicted to any of the aforementioned social media platforms, online games, or entertainment.

The survey asked parents to indicate the emotional or mental impact of social media, videos/OTT, and online games on their children. Among the 11,697 respondents, 39% mentioned aggression as an impact, followed by 37% citing impatience, 27% noting lethargy, 25% describing their children as hyperactive, and 22% reporting depression. On the positive side, about 10% of parents said that their children had become more social and 8% reported that their children were happier; 2% indicated that their children were not impacted in any way.

The survey asked whether India should prioritise the mandatory parental consent for children under 18 to join social media, OTT/video and online gaming platforms. Out of the 11,798 replies, 73% emphasised the need for parental permission, 13% believed that the minimum age for independent access should be set at 15 years, while 9% felt that maintaining the minimum age at 13 for joining without consent was appropriate.

## IIT-B MESS MAKES IT OFFICIAL, SANCTIONS SEGREGATED SPACE FOR 'VEGETARIAN FOOD ONLY'

Months after IIT Bombay (IIT-B) was mired in controversy over alleged caste discrimination after some students put up posters marking certain parts of a hostel canteen for "Vegetarians Only", the hostel administration has sanctioned a segregated space in the common mess for residents of hostel nos. 12, 13, and 14, where only people eating vegetarian food can sit — a rule for which "compliance is crucial".



After the controversy in July this year, the general secretary of the hostel mess had put out an email notifying that no space in the mess could be reserved for anyone or seek to exclude anyone.

However, this incident had kicked off a series of complaints by students to the hostel and mess administrators about the apparent problems of sharing a table with persons eating meat or eggs, triggering a series of meetings with hostel wardens and mess councillors of hostel nos. 12, 13, and 14 that share the mess space.

While the initial posters were pulled down only three weeks ago amid stiff resistance, students of the hostel on Wednesday received an email from their respective mess councillors about the new rule.

#### **'Unanimous decision'**

As per the email, a meeting was held between the wardens and mess councillors of the above-mentioned hostels. A "unanimous" decision was taken, according to a source in the administration, to issue the new rule reserving six tables in the mess for people eating vegetarian food.

The email said, "There is no doubt that there are some people who can't resist the view and smell of non-vegetarian food during their dining, this may create health issue as well."

Among "health issues" cited by vegetarian students in their complaints are feelings of "nausea" or "vomiting" upon seeing or smelling meat or eggs while eating.

The email added that the segregation was being done in an attempt to be "more inclusive". It further said the space for these six tables will be marked with the following: "This place is designated for vegetarian food ONLY".

On compliance, the email said, "In case of any violation identified by the mess team [council], they will take proper action and impose appropriate penalties."

It did not mention what the penalties or action taken would be in case of such violations.

#### **'Cases of harassment'**

According to residents of the hostels, there has been more than one instance of harassment of students who might have mistakenly taken their egg dish to a seat supposed to be "reserved" for vegetarians.

In one such instance, the student was also recorded and humiliated, some students told The Hindu, wishing to remain anonymous. The IIT Bombay administration is yet to respond to The Hindu's request for a comment on the issue.

IIT-B's Ambedkar Periyar Phule Study Circle, a student collective, denounced the circular, saying on social media, "After weeks of an ambiguous and awkward back and forth on the food segregation policy, the admin has finally revealed where they stand. We condemn this regressive policy."

## CARING FOR THE OLD

A good part of the world's population is growing older, and India mirrors this trend as well. The reality, according to the United Nations Population Fund's India Ageing Report 2023, is that the population above 60 years will double from 10.5% or 14.9 crore (as on July 1, 2022) to 20.8% or



34.7 crore by 2050. With one in five individuals set to be a senior citizen, there will be implications for health, economy, and society. In Kerala and West Bengal for instance, there is a growing population of the elderly who live alone as children migrate for better opportunities. With life expectancy increasing, thanks to better ways to fight disease, and decreasing fertility rates in many countries, including India, there are challenges in nurturing an expanding elderly population. Within this macro phenomenon, there are myriad other data of importance. For instance, women elderly citizens outnumber their male counterparts. At 60 years, a person in India may expect to live another 18.3 years, which is higher in the case of women at 19 years compared to men at 17.5 years. If women in India, where labour force participation is low at 24%, do not have economic and social security, they will become more vulnerable in old age.

There are also significant inter-State variations. Most States in the south reported a higher share of the elderly population than the national average in 2021, a gap that is expected to widen by 2036. While States with higher fertility rates, such as Bihar and Uttar Pradesh, expect to see an increase in the share of the elderly population too by 2036, the level will remain lower than the Indian average. Overall, more than two-fifths of the elderly are in the poorest wealth quintile — ranging from 5% in Punjab to 47% in Chhattisgarh; also, 18.7% of the elderly do not have any income. A high proportion of the rural population is among the elderly and often economically deprived. To meet the challenges, physical and mental health, basic needs of food and shelter, income security, and social care, a ‘whole-of-society’ approach is required. Geriatric care must be fine-tuned to their unique health-care needs. There are several schemes targeting the elderly but many are unaware of them or find it too cumbersome to sign up. The National Policy on Older Persons, 1999 and the Maintenance and Welfare of Parents and Senior Citizens Act, 2007 lay down the care of the elderly but to ensure that senior citizens live in dignity, public and private policies must provide a more supportive environment.

#### META’S INDIA TEAM DELAYED ACTION AGAINST MISINFORMATION LED BY ARMY IN J&K: REPORT

Facebook parent Meta’s Indian team delayed action against an organised propaganda and misinformation operation led by the Indian Army’s Chinara Corps in Jammu and Kashmir for a year, The Washington Post reported on Wednesday, citing former employees at the company. The report said Army officials met representatives of Twitter and Facebook, and defended the operation as a counter to Pakistani misinformation networks.

The report cited members of Meta’s coordinated inauthentic behaviour (CIB) team for Facebook, whose brief was to flag fake profiles and networks of accounts that artificially amplified messages on the social network around the world. When the team flagged the Chinara Corps’s alleged operation, Meta staff in India reportedly “warned against antagonising the government of a sovereign nation over actions in territory it controls”, and expressed concern that local employees “could be imprisoned for treason”, the Post reported.

It is unclear what the Chinara Corps’ network was posting, but the report cites “disinformation that put Kashmiri journalists in danger”, adding that many CIB employees at Facebook quit the company after Indian Meta staff stymied any pushback. The operation reportedly targeted Srinagar-based media outlet The Kashmiriyat and its editor, Qazi Shibli. The Hindu has reached out to Army representatives for comment.

“As a global company, we operate in an increasingly complex regulatory environment and are focused on keeping people safe when they use our services and ensuring the safety of our



employees in a manner consistent with applicable laws and human rights principles,” Meta said in a statement shared with The Hindu, adding that it prohibited coordinated inauthentic behaviour on its platforms.

This is not the first time the social media firm has been accused of allowing propaganda networks in India to go unchecked. In 2020, The Wall Street Journal reported that posts by Telangana Bharatiya Janata Party (BJP) MLA T. Raja Singh calling for violence against Rohingya immigrants from Myanmar were not taken down, in spite of warnings from Meta staff in the U.S., because of pushback from Ankhi Das, Mr. Thukral’s predecessor.

## TAMIL NADU, KERALA TO JOIN HANDS TO COUNT ENDANGERED NILGIRI TAHR

After launching Project Nilgiri Tahr last year for the conservation of the State animal, Tamil Nadu is now working on a standardised protocol to count the endangered population of southern India’s only mountain ungulate. The Tamil Nadu Forest Department will also propose to its Kerala counterpart to conduct a synchronised census, as the animal is only found in select habitats in the two States.

For the first time, drones may be used in the census, as the Nilgiri tahr prefers montane grasslands, with steep and rocky terrains at an altitude between 300 metres and 2,600 metres above sea level. There are believed to be a little over 3,100 of the animals living in highly fragmented habitats in the Western Ghats in Tamil Nadu and Kerala, ranging between the Nilgiris in the north and the Kanniyakumari hills in the south, according to a 2015 study by WWF-India.

### Synchronised survey

The Tamil Nadu Forest Department is proposing two censuses: one in November, after the southwest monsoon, and the other in March or April, after the calving season. If Kerala agrees to the proposal, the second census is likely to be a synchronised count. Supriya Sahu, Additional Chief Secretary of the State’s Environment, Climate Change and Forest Department, said this would be the first comprehensive, exclusive census for the State animal.

Experts felt that bounded count and double-observer survey methods could be priority models. Camera traps could also be used in difficult terrains.

“The Project Nilgiri Tahr team, during field visits, experimented with drones to observe tahr groups. Contrary to our perception, they were not disturbed by the drone flown around 100 metres above them,” said S. Ramasubramanian, Conservator of Forests and Field Director of the Anamalai Tiger Reserve.

Besides anthropogenic pressures, Nilgiri tahr habitats face threats from invasive plants such as wattles, pines, and eucalyptus in the grasslands. A component of the Project Nilgiri Tahrs aims to study the possible causes of the lumpy skin disease that has been observed in the animal, and suggest a remedy for it.

## WHY ARE TIGERS DYING IN NILGIRIS DISTRICT?

### The story so far:

A total of 10 tigers (six cubs and four adults) have died in the Nilgiris since the middle of August. The six tiger cubs died in two separate incidents, while the four adult tigers died in four separate



events, with at least one suspected to have been poisoned. The inability of the state forest department to trace the whereabouts of the two mother tigresses has raised concerns among conservationists about the welfare of the animals.

#### **How did the tigers die?**

The first reported tiger deaths occurred on August 16 in the buffer zone of the Mudumalai Tiger Reserve (MTR) in Siriyur. After conducting a postmortem on the remains, forest department officials said that they suspect that the cubs, believed to be only two weeks old, could have died due to starvation or umbilical infection. The second death was of an adult tigress in the Naduvattam Range in the Nilgiris forest division on August 17, with officials suspecting that the tigress died due to injuries after fighting with another animal. Another suspected incident of fighting is believed to have caused the death of the fourth tiger, the second adult, in the Kargudi forest range of MTR on August 31. On September 9, two more tigers were found dead in Udhagai South Range near Avalanche in the Nilgiris Forest Division. One of the tigers, a sub-adult, was found with injury marks, indicating that it too died due to a fight with another animal. However, the larger male, found dead nearby, had no apparent injuries. A search of the area led forest department staff to the carcass of a cow that had been preyed upon by the larger tiger. After an investigation, a man was arrested for poisoning the carcass of the cow in retaliation for the tiger hunting the animal. In a final incident, on September 17, four tiger cubs were found dead over the course of three days in Kadanad in the Nilgiris North Range.

#### **Why are conservationists concerned?**

In February this year, the forest department arrested four poachers from Rajasthan who had allegedly poached a tiger in the areas surrounding Emerald Dam near Avalanche, a few kilometres away from where the two tigers were found dead. In addition, the inability of the forest department to track down the two mothers of the six tiger cubs that died in Siriyur and Kadanad has raised concerns over their well-being. Camera traps and tiger trackers continue to look for the animals, but with little luck.

#### **What are the reasons for the deaths?**

One of the theories put forward by senior forest department officials is that the high density of tigers in the Mudumalai-Bandipur-Nagarhole complex of the Nilgiri Biosphere Reserve is pushing populations into the surrounding habitats in the Mukurthi National Park, Nilgiris and Gudalur forest divisions. This leads to increased competition between animals and more fighting, resulting in more deaths. According to Nilgiris Division's District Forest Officer, S. Gowtham, the division is now home to 54 tigers, a significant population. In fact, tigers have been frequently recorded in the outskirts of the Udhagamandalam town multiple times over the last few years.

Conservationists worry that this increase in population could lead to more negative human-animal interactions in the near future. They emphasise the need to regenerate degraded habitats that can be re-colonised by the tigers' prey such as Sambar, spotted deer and the Indian gaur.

#### **How are officials responding?**

To allay fears that poachers could be targeting tigers, the forest department plans to set up anti-poaching camps in six forest ranges surrounding the Mukurthi National Park. There are also plans to begin annual monitoring of tiger populations in the Nilgiris Forest Division, with the population size, range of each individual animal and other parameters to be recorded for better management.





They have also increased perambulation of areas surrounding key tiger habitats in Mukurthi and Mudumalai.

#### A DICTIONARY TO PREVENT A LANGUAGE FROM VANISHING

A language spoken by barely 1,600 people living in parts of West Bengal bordering Bhutan is to get a dictionary, thanks to the efforts of a professor at the University of Calcutta.

Toto is a Sino-Tibetan language spoken by the tribal Toto people and is written in the Bengali script. Even though prominent community member Dhaniram Toto developed a script as recently as in 2015, most people either write it in Bengali script or write in Bengali language. A book by the Padma Shri-decorated Mr. Toto, titled Dhanua Totor Kathamala, was written in Bengali.

The dictionary is a step in the direction of preserving the language, alive so far only orally, by putting its vocabulary in print.

Here too, Toto words, to be translated into Bengali and English, will be composed in the Bengali script, considering that the Toto script is still in a nascent stage and members of the tribe are more familiar with the Bengali script.

“The book [dictionary] is historic, in the sense that the community does not have any collection of words or published primer. Mr. Toto’s book is in Bengali,” said Mrinmoy Pramanick, assistant professor of Comparative Indian language and Literature in the University of Calcutta and chairman of Calcutta Comparatists 1919, a trust he founded along with his students to save marginal languages from extinction.

The trilingual dictionary, Toto Shabda Sangraha, will be released in Kolkata on October 7, at a function marking its founding.

The dictionary has been compiled by Bhakta Toto, a bank employee-cum- poet and published jointly by the trust and Bhasha Samsad, a publishing house run by Bitasta Ghoshal.

Said Bhakta Toto’s daughter Sanchita: “This book will protect the language from vanishing. Even those studying in English and Bengali can stay in touch with Toto because of this compilation.”

The trust will soon publish Uttal Torsa, another Bengali novel written by Dhaniram Toto.

#### IN MEHRAULI, THIS 19TH-CENTURY MONUMENT IS TESTAMENT TO AN EMPIRE IN ITS DYING DAYS

Nestled deep inside the historic galis of Mehrauli, right next to the shrine of Sufi Saint Qutubuddin Bakhtiyar Kaki, stands a poignant symbol of the Mughal empire in its last days — Zafar Mahal. Now overgrown with wild grass, its walls dilapidated and facade crumbling, the monument quietly narrates the story of the last years of the glory of a powerful dynasty that ruled much of the sub-continent for over 300 years.

It was in the early 19th century that Mughal king Akbar Shah II began construction of the palace. According to historian and author Rana Safvi: “Zafar Mahal is the last monumental structure built by the Mughals.”

Narrating the story behind the place, writer-filmmaker Sohail Hashmi says: “Mirza Jahangir, the son of Akbar Shah II, was imprisoned in Allahabad fort for two years after he attempted to attack

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



the then British Resident. On his release, his mother decided to walk barefoot to the (Mehrauli) shrine from Shahjahanabad to express her gratitude. The flower sellers of Delhi would have none of it, a Mughal queen putting herself through so much pain, and decided to cover the entire path with flowers for her to walk on with ease. This gave birth to phoolwalon ki sair, a fair that soon became an annual week-long affair. Since, during this period, the entire court would shift to Mehrauli, Akbar Shah II decided to build this palace here.”

By the latter half of the century, Akbar Shah’s successor Bahadur Shah Zafar II built an imposing gate leading to the palace. Soon, the palace began to be called Zafar Mahal.

## HOW INDIANS AND THEIR BOATS FARED IN THE DEEP SEA: CLUES FROM A LITTLE-KNOWN PAST

A 21-metre-long ship, built using an age-old technique of stitching together planks of wood with ropes, cords, coconut fibres, natural resins, and oils, is set to undertake a voyage from Odisha to Bali in Indonesia in November 2025, manned by a crew from the Indian Navy.

The project, an initiative of the Government of India to “revive the country’s rich maritime tradition and heritage”, casts a rare spotlight on the legacy of Indians as seafarers and the boats or ships they employed as they set off their transcontinental trade voyages.

What’s the earliest known instance of people from the subcontinent taking part in sea trade? And as they set off on some of the most daring expeditions, with little but the wind in their sails to guide them, what were the boats or ships they employed?

### Early evidence of maritime trade

Evidence from Indus Valley, Mesopotamia and other coastal sites on the Arabian Sea show the existence of maritime trade networks circa 3300-1300 BCE. The dock at Lothal (in present-day Gujarat), a remarkable engineering feat for its time, shows the civilisation’s deep understanding of the workings of tides and winds.

Meanwhile, Neolithic-Chalcolithic sites in present-day Odisha (dated to as early as circa 2300 BCE) have yielded evidence of boat building and fishing, and, possibly, contact with South-East Asia.

Experts also point to how the Vedas (composed between circa 1500-500 BCE) feature colourful tales of seafaring and the perils involved. The Buddhist fables Jataka Tales (composed circa 300 BCE- 400 CE) as well as Tamil Sangam literature (composed circa 300 BCE-300 CE) contain even clearer references to seas and seafaring.

Despite these hints and decades of scholarship on thriving maritime networks featuring India and Indians, the country’s maritime heritage has not percolated into popular narratives of the country’s past.

Archaeologist PJ Cherian, who has led the Pattanam (Muziris) excavations in Kerala, suggests that historians “failed to include our maritime heritage in greater narratives of India’s past due to commonly held biases”.

Early maritime activity was largely restricted to the coasts. “Movement through the deep seas intensified by the 1st century BCE, with the emergence of the Roman Empire and its insatiable appetite for commodities from the East,” Cherian said.

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



## DOPING IS NOT THE SEEDY UNDERBELLY OF INDIAN SPORT — IT'S AN OPEN SECRET

A steeplechaser at the Delhi athletics championship crossed the finish line and kept running, fleeing dope testers who had turned up the day after a tell-tale video of doping syringes was circulated. Another sprinter ran the 100m alone on the eight tracks, as seven other entrants never turned up, fearing they would be tested. Amidst these bizarre scenes at the JN Stadium, lay the tragedy of India's doping menace in a sport that offers fantasies of dizzying success. Athletes from school-level meets upwards are risking their bodily health with amateur doping practices, hoping they find breakthrough success in terms of jobs or spots in national teams, knowing that sophisticated cheats have gotten away in the past. When the testers show up, the farce of just one athlete willing to run the race points to a deep rot where the honest runner becomes ineligible for a medal because the others ran away from testing.

Pictures of syringes in stadium bathrooms have been familiar for decades. Yet, the National Anti Doping Agency, with its offices in JN Stadium, was nowhere in the lead-up to the event. When officials did turn up for testing, the results were immediate. Competitions in remote corners of India take place without anti-doping officials present, and the numbers of those failing tests will be much higher should they come under the scanner.

At the core of this corruption is encouragement of coaches and parents for quick-fixes, and the lethargy of India's anti-doping machinery. Diligence in keeping the sport clean by instilling fear of being tested will remain as important as efforts to stop players from taking the quick and treacherous route to success. Doping is not the seedy underbelly of Indian sport, it's an open secret. More stringent testing can send a message, as Delhi proved. If only it didn't take a viral video of syringes to nudge the testers to show up.



# DreamIAS



## BUSINESS & ECONOMICS

### WHAT ARE THE REASONS FOR RISE IN GLOBAL DEBT?

#### The story so far:

Global debt rose to an all-time high of \$307 trillion in the second quarter, by the end of June 2023, the Institute of International Finance (IIF) said in a report released last week. Quite notably, global debt has risen by about \$100 trillion over the last decade. Further, global debt as a share of gross domestic product (GDP) has started to increase once again to hit 336% after dropping quite steeply for seven consecutive quarters.

#### What is global debt?

Global debt refers to the borrowings of governments as well as private businesses and individuals. Governments borrow to meet various expenditures that they are unable to meet through tax and other revenues. Governments may also borrow to pay interest on the money that they have already borrowed to fund past expenditures. The private sector borrows predominantly to make investments.

#### Why is it rising?

Both global debt in nominal terms and global debt as a share of GDP have been rising steadily over the decades. The rise came to a halt during the pandemic as economic activity turned sluggish and lending slowed down. But global debt levels, it seems, have started to rise again in the last few quarters. Most (over 80%) of the rise in global debt in the first half of the year has come from advanced economies such as the U.S., the U.K., Japan, and France. Among emerging market economies, China, India and Brazil have seen the most growth in debt. During the first half of 2023, total global debt rose by \$10 trillion. This has happened amid rising interest rates, which was expected to adversely affect demand for loans. But a rise in debt levels over time is to be expected since the total money supply usually steadily rises each year in countries across the globe. In other words, the rise in global debt levels witnessed during the first half of the year is nothing out of the ordinary and does not per se have to mean trouble for the global economy. In fact, even a simple rise in the total amount of savings in an economy can cause a rise in debt levels as these increased savings are channelled into investments.

What is more interesting than rising debt levels is the drop in global debt as a share of GDP over seven consecutive quarters prior to 2023. The IIF attributes the decline in global debt as a share of GDP to the rise in price inflation, which it claims has helped governments to inflate away the debts denominated in their local currencies. Inflating away of debt refers to the phenomenon wherein the central bank of a country either directly or indirectly uses freshly created currency to effectively pay off outstanding government debt by, for example, purchasing government bonds in the market. But the creation of fresh money causes prices to rise, thus imposing an indirect tax on the wider economy to pay the government's debt.

#### Is it a cause for worry?

Rising global debt levels usually leads to concerns about the sustainability of such debt. This is particularly so in the case of government debt which is prone to rise rapidly due to reckless borrowing by politicians to fund populist programmes. And when central banks raise interest rates, servicing outstanding debt becomes a challenge for governments with a heavy debt burden.



It should be noted that despite rising debt levels over the last decade, the interest that governments had to pay lenders largely remained manageable due to extremely low interest rates, particularly in western economies. This is set to change now as central banks have let interest rates rise in order to fight high price inflation since the pandemic. Rising interest rates can increase pressure on governments and force them to either default outright or inflate away their debt. Many analysts, in fact, believe that several governments will never be able to pay their debt in full and that inflating away debt is the only way for such governments to avoid an outright default on their debt. In its report, the IIF has also warned that the international financial infrastructure is not equipped to handle unsustainable domestic debt levels. Generally, rapidly rising private debt levels also lead to worries among analysts about their sustainability. This is because such a rise is linked to unsustainable booms that end in economic crises when such lending is not backed by genuine savings.

The most recent example of the same was the 2008 global financial crisis. The crisis was immediately preceded by an economic boom fuelled by the U.S. Federal Reserve's easy credit policy.

#### UNLESS JOB CREATION PICKS UP, INDIA COULD GET OLD BEFORE IT BECOMES RICH

The issue of job creation has been at the core of policy discourse. More so in recent decades, when acceleration in economic growth has not translated to a commensurate increase in high-quality employment generation in the country. Yet, there have also been significant changes in the labour market that reflect, in part, the changing structure of the Indian economy, and the underlying economic momentum. A new report — State of Working India 2023 — throws light on several such trends. These warrant closer examination.

Over the last decades, there has been an increase in the share of non-agricultural employment, more so since the mid 2000s. This increase has been much faster than the rise in the share of regular wage employment or the organised sector. This indicates that jobs created have been more informal in nature. At the same time, the data also points towards an increase in intergenerational mobility over the years. As per the report, in 2004, around 80 per cent of sons of casual wage workers were also engaged in casual employment. By 2018, this had fallen across the board, though to a lesser extent in the case of SCs/STs. Alongside, the percentage of sons, who just like their fathers, were also engaged in regular wage employment, has also increased. This suggests greater opportunities in the labour market. The report also points toward the tenuous link between long run GDP and employment growth. For instance, it estimates that between 2004 and 2011, when non-agricultural value added grew by 7.7 per cent per annum, non-agricultural employment growth was 3.4 per cent. However, between 2011 and 2017, when value added grew by 7.4 per cent, employment growth fell to 1.7 per cent. And from 2017 to 2021, a period which also includes the pandemic years, when value added grew by 3.4 per cent, employment growth was 3.4 per cent. Questions have, however, been raised over the quality of jobs created. For instance, the increase in female employment in recent years, which has been typically of the self-employed type, has been linked to economic distress. While unemployment has fallen from the levels seen during the pandemic, it still remains high, especially among the young and the more educated.

Successive governments have announced policies to help boost the creation of good quality jobs in the country. However, progress has been slow. The problem will become more acute as millions enter the labour force over the coming decades. Unless job creation picks up, there is a risk of the country turning old before it becomes rich.



## TROUBLE WITH THE INCENTIVES

One problem is the incentives at the sourcing and the user ends of the phosphorus value chain. In rural India, the most powerful farmers in villages are typically also the pesticide and fertiliser dealers and extend credit to farmers with smaller holdings. As a result, the latter are incentivised to over-apply fertilisers rather than to reduce them. This needs to be tackled separately, through better extension services and awareness campaigns.

In urban India, sewage is perceived to be an undignified activity historically relegated to people belonging to the so-called 'lower' castes. The regulations reflect this "get rid of it" mindset. Around the world, regulations have been framed in terms of discharge standards. Companies have to ensure nitrate and phosphate levels in effluent treatment plants are below an acceptable level. But when the regulations are written this way, treatment plant operators in India often dilute effluents with freshwater before discharging it. Dilution is not really a solution to pollution as the same quantity of nutrients end up in water bodies anyway.

Even if regulation and enforcement are tightened, the fundamental problem persists: wastewater treatment is a cost centre, not a revenue centre, for most cities. No one wants to pay the high cost, not even Bengaluru, a city with a relatively high GDP per capita. And while utilities get paid to supply water, they do not gain additional revenue from treating wastewater to standards. In fact, from their perspective, it merely increases the cost of sewage treatment, further burdening them. So they tend to drag their feet until the National Green Tribunal imposes a fine.

### **Creating a circular water economy**

This is why fundamentally rethinking our whole approach may work. If the technology is cheap enough, can we give a concession to set up STPs with phosphorus mining plants and allow them to sell the fertiliser? To do this, we need systemic – not incremental – change.

This requires every single stakeholder to make small adjustments. Innovators need to lower the costs of sewage mining to be financially viable in India; regulators need to allow the use of urban-mined phosphorus in agriculture; and STPs need to be paid not based on discharge standards but on nutrient recovery.

And such changes, while complicated, could also solve multiple problems. India can become less dependent on uncertain geopolitical crises; farmers can procure fertilisers at affordable rates; water bodies will have some hope of becoming swimmable (after eliminating legacy nutrients in lake beds); and public health can gain from the consumption of food grown in cadmium-free soils.

## 20% TCS ON REMITTANCES: BANKS READY TO COLLECT THE LEVY FROM SUNDAY

After a three months' delay, banks have said they are ready with their systems to implement the government's decision to start levying higher Tax Collection at Source (TCS) rates on payments under the Liberalised Remittance Scheme (LRS) from October 1.

The higher TCS rates will be applicable on various international spends such as overseas tour packages which include travel related to medical treatment, business, education, pilgrimage; personal gifts and donations, family maintenance and investments.

The TCS was originally supposed to be implemented from July 1, 2023 but the decision was postponed to October 1 following resistance from customers and banks asked for time to get their



systems ready. Banks and credit card networks had raised concerns regarding the implementation of the TCS on international credit card payments given the extensive tweaks required to banks' IT infrastructure.

All top lenders said they are ready to implement the government directive. "Bank has put in the IT system to roll it (new TCS rates) out, which will be implemented from October 1. There are four buckets and the IT system has been designed accordingly," said a top official from a nationalised bank, with a significant market share.

Under LRS, all resident individuals, including minors, can remit up to US \$250,000 (approximately Rs 2.07 crore) abroad per year without prior approval from the RBI.

As per the proposed TCS rates under LRS, overseas tour package will attract TCS of 20 per cent from October 1, compared to 5 per cent.

However, TCS will not be levied on credit card spending abroad. "It (TCS on international credit card spends) is not being implemented from October 1. The decision has been put in abeyance," said an official of a private bank.

On International spends through credit cards, HDFC Bank said in a communication to account holders, "the classification of use of international credit card while being overseas, as LRS is postponed. Therefore, no TCS shall be applicable on expenditure through international credit card while being overseas till further order."

However, for education where the source of fund is a loan, there will be no TCS for less than Rs 7 lakh per individual per annum; for amounts equal to or more than Rs 7 lakh, the applicable TCS will be the same at 0.5 per cent. For education purposes where the source is self-funding, for amounts less than Rs 7 lakh no TCS will be levied, but for amounts of Rs 7 lakh and above, TCS rate will continue to be 5 per cent.

The government had said the decision to defer levying higher TCS rates was taken after discussions with various stakeholders. It was also aimed at giving banks and card network providers adequate time to put in place the requisite IT based solutions.

According to Reserve Bank of India (RBI) data, fund outflow under the RBI's LRS which shot up to \$3.89 billion in June has come down to \$ 2.359 billion in July this year. In the first four months of the current fiscal, the total outward remittances under the LRS for resident individuals stood at \$11.47 billion. Total remittances in 2022-23 were \$ 27.14 billion. Travel accounts for more than 50 per cent of the total remittances. In 2022-23, travellers took out \$ 13.66 billion under LRS.

The Budget 2023-24 had proposed hiking the TCS rate to 20 per cent from 5 per cent above Rs 7 lakh threshold for all purposes other than education and medical treatment. Also, for overseas tour packages, the government had proposed hiking the TCS rate to 20 per cent from 5 per cent, without any threshold, with effect from July 1. On May 16, the Centre amended rules under the Foreign Exchange Management Act (FEMA), bringing international credit card spends under the LRS. As a consequence, spending on international credit cards would have then attracted a higher rate of TCS at 20 per cent from July 1. However, on May 19, the government clarified that any payments by an individual using their international debit or credit cards up to Rs 7 lakh per financial year will be excluded from the LRS limits and hence, will not attract any TCS.

The government then postponed the implementation to October 1, 2023.



## HOUSEHOLDS ARE TAKING MORE LOANS TO BOOST THEIR SPENDING

Data released by the RBI shows that household gross financial assets have dipped marginally from 11.1 per cent of GDP in 2021-22 to 10.9 per cent in 2022-23. However, net household financial savings, which take into account their financial liabilities, have fallen to a multi-decade low of 5.1 per cent of GDP in 2022-23. Excluding the pandemic induced bump in 2020-21 — net savings had then surged to 11.5 per cent of GDP — household savings have typically ranged around 7-8 per cent in recent years. For instance, in the pre-pandemic year of 2019-20, savings were estimated at 8.1 per cent, while in 2021-22, they were pegged at 7.2 per cent. As the household sector is a major source of funds to the economy, these trends warrant careful examination.

The decline in net household financial savings can be traced largely to the rise in their liabilities. Household financial liabilities rose from 3.8 per cent of GDP in 2021-22 to 5.8 per cent in 2022-23. To put these numbers in perspective — in absolute terms, household borrowings from financial institutions (banks, non-banking financial companies, housing finance companies and others) rose from Rs 9 lakh crore in 2021-22 to Rs 15.8 lakh crore in 2022-23 — an increase of 76 per cent. The disaggregated data shows loans from the banking sector rose from Rs 7.76 lakh crore to Rs 12.16 lakh crore over this period, while borrowings from NBFCs increased to Rs 2.39 lakh crore, up from Rs 21,432 crore. While this sharp surge in borrowings could be due to both push and pull factors, some have raised concerns that such a sharp rise in liabilities, in such a short time, could indicate growing household distress. Data on bank credit does indicate that households have utilised the higher borrowing for the purchase of houses and vehicles and also for financing consumption.

Beyond a point, higher leverage could have implications for both households and the financial system. The RBI's financial stability report had earlier noted that the share of unsecured retail loans has gone up. It had also pointed out that some signs of stress in the credit card and education segments in the personal loan category were emerging. There are also limits to this credit-driven growth in private consumption. In the absence of a sustained growth of household incomes, a weakening of debt-led household consumption could have implications for the momentum in the broader economy.

## SURETY BONDS MARKET FAILS TO KICK OFF

The ambitious plan of the government to launch the Surety Insurance Bonds market — an alternative to bank guarantees in infrastructure projects — has failed to take off in the last three years due to technical and financial impediments. The Surety Bond market in India hasn't moved at all after Nitin Gadkari, Union Minister, Ministry for Road Transport and Highways (Morth), launched two basic level Surety Bonds (Bid Bonds) in December 2022, issued by Bajaj Allianz General Insurance, insurance sources said. While some of the leading general insurers like New India Assurance, ICICI Lombard General Insurance, SBI General Insurance and Bajaj Allianz General Insurance have announced their plans to issue Surety Bonds in recent months, nobody has been able to do so due to lack of supporting elements.

### What's Surety Bond?

Surety Bonds are a type of insurance policy protecting parties involved in a transaction or contract from potential financial losses due to a breach of contract or other types of non-performance. The issuing insurer provides guarantee, for a premium, in the case of a default in execution of a project. They serve as a risk mitigation tool for maintaining integrity, quality, and adherence to contractual





terms, ultimately contributing to the smooth functioning of projects especially in infrastructure sector and fostering a healthy business environment.

#### AMID SUPPLY RISKS, TATA MOTORS CUTS RARE EARTH USE IN NEW EV BY A THIRD

After the success of the first generation of the Nexon EV, Tata Motors has launched the car's second generation – with a lighter motor that allows for a longer range with the same battery size, and cuts down sharply on the use of rare earth elements by nearly a third. The car is perhaps the most important one in Tata's large portfolio, with its predecessor having played a key part in the company selling over 1 lakh electric vehicles in India.

Rare earth elements are a sticking point in the EV supply chain, as it can be difficult to secure supplies, and much of worldwide production is either sourced from or processed in China.

Global EV makers and suppliers too are working on reducing the rare earths, with Tesla announcing the creation of a permanent magnet electric vehicle motor with zero rare earth element at its Investor Day event earlier this year. Japanese metal maker Proterial, formerly known as Hitachi Metals, has also developed a prototype motor for electric vehicles that uses magnets that do not contain the rare-earth metal neodymium and a switch to a new magnet mainly composed of ferrite.

"We have used a new generation motor in the latest Nexon EV, which has lesser energy consumption but is more cost effective. We have used a lot of the localisation benefits... In the motor we have used lesser content of rare earth elements... The 1.4 billion kilometre data reading that we have helped us," Shailesh Chandra, managing director, Tata Motors Passenger Vehicles, told The Indian Express.

The rare earth elements in an EV are used in electric car motors and not the batteries. A permanent magnet motor uses magnets embedded into or attached to the surface of the motor's rotor. The magnets are used to generate a constant motor flux instead of requiring the stator field to generate one by linking to the rotor. The magnets used in these motors are made with rare earth elements such as Neodymium, Terbium, and Dysprosium. Neodymium magnets are the most common type currently used in EV motors, but stable procurement of this has been an issue given the stranglehold on the Neodymium value chain.

Rare earths are mined by digging vast open pits in the ground, which can contaminate the environment and disrupt ecosystems. When poorly regulated, mining can produce wastewater ponds filled with acids, heavy metals and radioactive material that might leak into groundwater.

With the new Nexon EV, Tata Motors has managed a 30 per cent magnet mass reduction in the car's motor as it cut down on the use of rare earth elements.

Asked if the reduction in the use of rare earths was purely for cost reasons, or whether there were larger strategic motivations involved, Anand Kulkarni, the company's chief product officer and VP – high voltage programmes, TPEM, said, "Sustainability is a key pillar of the EV business so wherever possible the team will look for such enhancements".

Unlike the first generation Nexon EV, which came about as an evolution of the car originally conceptualised and designed as an internal combustion engine (ICE) vehicle, the second generation has seen the shift to an EV-first thinking, highlighting the direction Tata Motors wants to steer its portfolio towards.



## OIL MINISTER PURI LAUNCHES IOC'S TRIAL OF GREEN HYDROGEN-POWERED FUEL CELL BUSES

The country's largest fuel retailer Indian Oil Corporation (IOC) Monday started the operational trial of green hydrogen-fuelled buses in Delhi and the nearby areas of the National Capital Region (NCR).

The trial, which was launched by Petroleum Minister Hardeep Singh Puri in the capital with two hydrogen fuel cell buses manufactured by Tata Motors, will include 15 buses by the end of the year.

As part of the trial, the buses will ply on a predetermined route of over 100 km in Delhi NCR and will clock a cumulative mileage of over 3 lakh kilometres for long-term performance and durability assessment. Initially, the two buses will ply without passengers, given that the standards for using the highly flammable hydrogen as an automotive fuel are still a work in progress.

green hydrogen fuel cell bus The buses are fitted with four cylinders with a cumulative capacity of 30 kilograms of hydrogen at 350 bar pressure. (Express photo by Amit Mehra)

In a few weeks, four more buses will be added to the trial as it enters its next phase, which should also see these buses ply with passengers on board.

The four buses are currently undergoing tests at the Automotive Research Association of India (ARAI) in Pune for that purpose, a senior IOC official said.

Hydrogen produced by splitting water in an electrolyser powered by renewable energy is called green hydrogen, and it is considered totally clean as it has no carbon emissions in its entire value chain. The green hydrogen being used for the trial is being produced at IOC's green hydrogen demonstration plant at the company's research and development facility in Faridabad.

The buses are fitted with four cylinders with a cumulative capacity of 30 kilograms of hydrogen at 350 bar pressure, providing a total estimated range of over 350 km for a full refill, which comes out to around 12 km per kg. This is considerably higher than the fuel economy of around 3 km per litre for diesel-powered buses. According to IOC officials, it takes 10-12 minutes to fully refill one bus with 30 kg of hydrogen.

In a hydrogen-powered fuel cell automobile, hydrogen reacts with oxygen in the fuel cells, releasing electrical energy to power the automobile, and water as the byproduct. Fuel cells are considered highly efficient as compared to conventional internal combustion (IC) engines. The electrical efficiency of fuel cells is 55-60 per cent as compared to thermal efficiency of around 25 per cent for IC engines.

It may be noted that India sees itself as a potential green hydrogen production and export hub, and the government even launched the National Green Hydrogen Mission in January with an initial outlay of around Rs 20,000 crore to give a fillip to the sector. Various Indian energy companies, from the public sector as well as the private sector, have announced plans to foray into the green hydrogen ecosystem.



## AI-POWERED COKE POINTS TO A DESPERATION TO REMAIN RELEVANT

Perhaps the future tastes like despair. At the very least, Coca-Cola's attempts at capturing its flavour smack of desperation. Earlier this week, the beverage brand launched "Coca-Cola Y3000", a zero-sugar drink developed using artificial intelligence, and it is meant to evoke a sense of the future with its taste. According to the company's website, AI was used so that "fans envision the future through emotions, aspirations, colours, flavours and more". If you're wondering why people who manufacture artificial drinks are messing around with code to encroach on the province of prophets and soothsayers, you're probably not alone.

The AI-soft drink maker combo is not the first attempt at time travel through taste. Among the most celebrated, remarkable achievements in literature is *À la Recherche du Temps Perdu* (translated into *Remembrance of Things Past* or *In Search of Lost Time*). In the seven-volume epic, the main character eats a madeleine — a bite-sized cake — and is instantly transported to his childhood, and the books unfold. But even Proust did not see the future of the characters he wrote. Coke, on the other hand, imagines it will still exist, 1,000 years on. Unfortunately, if the initial reactions to Y3000 are anything to go by, the future of coke doesn't taste too good.

AI, machine learning, augmented reality, futuristic — the rush to get on the jargon bandwagon seems to be overtaking even the most successful businesses. The arrogance of predicting taste or, conversely, the silliness of the idea, betrays a lack of creative imagination. Coca-Cola is an iconic brand that has managed to be a leader in the food and beverage space for the better part of a century. Y3000, though, seems like the sad attempt of a legacy player to appear new, when it does not need to — like a middle-aged man in a backwards cap. Better, always, to stay with what's working. Corporate hotshots shouldn't try to imagine the past or the future, with or without AI. Leave that to the writers.

## JEWAR AIRPORT GETS 'DXN' code: How THE IATA ASSIGNS UNIQUE CODES TO EACH AIRPORT

The upcoming Noida International Airport (NIA) in Jewar was awarded its own unique international three-letter code, 'DXN', by the International Air Transport Association (IATA).

Explaining the code's significance, NIA CEO Christoph Schnellmann said it gives a clear understanding of Delhi-Noida and its connectivity to the world through this airport. "The D in DXN signifies Delhi, which is the national capital, and N stands for Noida, which shows our presence in the Western UP area. X, we think, signifies connectivity within India and the world," he said on Wednesday.

Phase 1 of the airport, 65 km from Botanical Garden, Noida, is proposed to be operational by the end of 2024. It will have one terminal with a capacity of 12 million passengers per year and a 3.9-km-long North Runway.

### What are airport codes?

Airport codes are unique identifiers assigned to each airport. While most people are familiar only with the codes assigned by IATA, a Montreal-based international aviation trade association, each airport actually has two unique codes — the other assigned by International Civil Aviation Organization (ICAO), an arm of the United Nations. Both are used to accurately identify airports, but in different contexts.



The three-digit IATA codes are used for passenger facing operations — on tickets, boarding passes, signages, etc. The four-digit codes assigned by the ICAO, on the other hand, are used by industry professionals such as pilots, air traffic controllers, planners, etc. For instance, for the Indira Gandhi International Airport in Delhi, the IATA code is DEL whereas the ICAO code is VIDP.

Airport coding first began in the 1930s, in the very early days of commercial aviation. At the time, airlines and pilots typically chose their own two letter codes to identify destinations. However, by the 1940s, as the number of airports grew exponentially, a system of three letter codes was devised (allowing for a far higher number of combinations) and eventually standardised in the 1960s by the IATA.

“This is one of our major milestones as an airport operator, the identity of our airport. The code is for infinity, it’s not going to change (as long as the airport remains),” said Kiran Jain, Chief Operating Officer, NIA.

#### **How does IATA assign airport codes?**

While many airport codes intuitively make sense (like DEL for Delhi or BOM for Mumbai, previously Bombay), others seem to be more random (like IXR for Ranchi). This is what determines the IATA code for any airport:

How the airport wishes to identify itself. Lots of lobbying goes on behind the scenes by an airport authority to receive a code that is meaningful in some way. As we can make out from NIA CEO Schnellmann’s statement, the code for the Jewar airport, while seemingly random at first glance, is rife with meaning. City names, airport names, and location names are some common bases for codes.

The availability of said code. The codes are meaningful only because they are unique. This means that no two airports can have the same IATA codes. This is one of the reasons why the Ranchi airport is not RAN (taken by Ravenna, Italy).

Certain common conventions, which depend on the country. The other reason why the Ranchi airport is IXR is due to a convention followed in India where military airports extended for civilian traffic are assigned codes beginning with ‘IX’. For instance, Agartala’s airport is IXA, Chandigarh’s airport is IXC, and Leh airport is IXL.

Similarly, in Canada, all airport codes begin with ‘Y’ — Toronto has YYZ, Vancouver YVR, and so on. In the US, all codes starting with N are reserved for the US Navy.

The assignment of these codes is governed by IATA Resolution 763 and are published twice each year in the IATA Airline Coding Directory.



## LIFE &amp; SCIENCE

## TIMELESS QUEST

On September 24, NASA's OSIRIS-REx spacecraft dropped off a capsule over the earth, leaving it to be pulled down by the planet's gravity. It then deployed parachutes and gently landed in Utah in the U.S., where experts waited to retrieve its invaluable contents: around 250 grams of rocks and dust that OSIRIS-REx had collected from the surface of 101955 Benu. Benu is an asteroid orbiting the sun (with a period of 436 days) such that it comes relatively close to the earth once every six years or so. It is a carbonaceous asteroid with characteristics that suggest it settled into its present form and composition within 10 million years after the solar system's formation, surviving the last 4.5 billion years nearly intact. Such 'leftover' pieces of debris are expected to reveal the system's ingredients and the signatures of the processes that combined them in different ways. Many scientists also believe that when rocks such as Benu crashed into the earth, they delivered the compounds required for the formation of life. Also, as Benu could smash into the earth between 2178 and 2290, studying it could inform ways to prevent this collision. NASA launched OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer) in 2016. Two years later, scientists worked to place it into orbit around Benu, at an altitude of just 2 km. Benu itself was zipping through space at 28 km/s. On October 20, 2020, OSIRIS-REx landed just long enough to grab a sample of the asteroid from a pre-identified spot before flying back up. In May 2021, it began its long journey back to earth, where it dropped off the capsule holding Benu's regolith. After this, it will reincarnate in its OSIRIS-APEX avatar, to rendezvous with the silica-rich asteroid 99942 Apophis in 2029.

The OSIRIS mission has two identities. In time, it works alongside Japan's two Hayabusa missions, which have collected and returned samples of 25143 Itokawa and 162173 Ryugu, to expand our knowledge of the solar system's history. OSIRIS is NASA's third element of its 'New Frontiers' programme, after New Horizons (to explore the Kuiper Belt) and Juno (to study the planet exerting the largest gravitational influence in the solar system). While studies of Benu include significant commercial components — such as opportunities for space-mining and impact mitigation technologies — they also participate in a more timeless quest: to find out where life came from and what its fate could be. With OSIRIS's capsule, humankind virtually gets to hold infinity in the palm of the hand.

## RISING ANTARCTIC ICE MELT WILL DRAMATICALLY SLOW GLOBAL OCEAN FLOWS, STUDY SAYS: WHY THIS MATTERS

Rapidly melting Antarctic ice is dramatically slowing down the flow of water through the world's oceans, and could have a disastrous impact on global climate, the marine food chain and even the stability of ice shelves, new research has found.

The "overturning circulation" of the oceans, driven by the movement of denser water towards the sea floor, helps deliver heat, carbon, oxygen and vital nutrients around the globe.

But deep ocean water flows from the Antarctic could decline by 40% by 2050, according to a study published on Wednesday in the journal Nature.

"That's stunning to see that happen so quickly," said Alan Mix, a paleoclimatologist at Oregon State University and co-author on the latest Intergovernmental Panel on Climate Change assessments,



who was not involved in the study. “It appears to be kicking into gear right now. That’s headline news.”

#### **What the study found**

As temperatures rise, freshwater from Antarctica’s melting ice enters the ocean, reducing the salinity and density of the surface water and diminishing that downward flow to the sea’s bottom.

While past research has looked at what could happen to similar overturning circulation in the North Atlantic – the mechanism behind the doomsday scenario that would see Europe suffer from an Arctic blast as heat transport falters – less has been done on Antarctic bottom water circulation.

Scientists relied on around 35 million computing hours over two years to crank through a variety of models and simulations up to the middle of this century, finding deepwater circulation in the Antarctic could weaken at twice the rate of decline in the North Atlantic.

“They are massive volumes of water... and they are bits of the ocean that have been stable for a long time,” said study co-author Matthew England, an oceanographer at the University of New South Wales, in a news briefing.

#### **Disrupting the base of the food chain**

The effect of meltwater on global ocean circulation has not yet been included in the complex models used by the IPCC to describe future climate change scenarios, but it is going to be considerable, England said.

Ocean overturning allows nutrients to rise up from the bottom, with the Southern Ocean supporting about three-quarters of global phytoplankton production, the base of the food chain, said a second study co-author, Steve Rintoul.

“If we slow the sinking near Antarctica, we slow down the whole circulation and so we also reduce the amount of nutrients that get returned from the deep ocean back up to the surface,” said Rintoul, a fellow at Australia’s Commonwealth Scientific and Industrial Research Organisation (CSIRO).

#### **Leaving more CO2 in the atmosphere**

The study’s findings also suggest the ocean would not be able to absorb as much carbon dioxide as its upper layers become more stratified, leaving more CO2 in the atmosphere.

The study showed that warm water intrusions in the western Antarctic ice shelf would increase, but it did not look at how this might create a feedback effect and generate even more melting.

“It doesn’t include the disaster scenarios,” said Mix. “In that sense, it’s actually kind of conservative.”

### **THE STORY OF HOW SCIENTISTS FOUND THAT OUR ANCESTORS ALMOST WENT EXTINCT**

The human population on the earth exceeded eight billion people in November 2022, underscoring our species’ status as the dominant force on our planet, with our unparalleled cognitive abilities and technological prowess and ability to harness, engineer, and reshape the environment around us.



This dominance has also resulted in some catastrophic outcomes as we have expanded our footprint, resulting in habitat destruction, pollution, and climate change, pushing a number of species to the brink of extinction. It is hard to imagine that we as a species, just as other animals and plants, could have also been pushed to the brink of extinction at multiple points in the entire history of evolution.

Think about a scenario where the whole human species is represented by a few members only, living in a very hostile natural environment where everyday existence is at the mercy of natural forces. This small group, in addition to its extraordinary resilience and creative survival tactics, would have had the enormous responsibility of keeping the entire human species alive. It's quite possible that our ancestors could have experienced many such species-defining moments on their path to dominating the world as we know it today.

Researchers have been interested in understanding the evolution, and history of the human species and genome sequences have proved to be of tremendous help. Together with evidence such as fossils, researchers have been able to piece together parts of human evolution and history in astonishing detail. However, ancient DNA is limited by the timeline: it can offer only recent insights into human evolution; DNA older than that is seldom preserved intact.

#### **Molecular clock**

Our ability to sequence human genomes so quickly and computational tools to analyse the data has allowed us a near-pristine view of the past. This is because genome sequences offer a sort of a snapshot of the molecular clock of human evolution. The genome accumulates genetic variations at a constant rate; the recombination and exchange of genetic material also occur at the time of generation of gametes (sperm and ovum).

There have also been insights from the sequences of the mitochondria and the Y chromosome, which are passed on matrilineally and patrilineally, respectively.

Taken together, scientists have developed several computational approaches to piece together how humans evolved, and have been able to extend them to timescales far beyond those afforded by ancient DNA. They have thus been able to identify population bottlenecks and founder events as well as determine the age of many genetic diseases.

For example, in a March 2018 paper, researchers concluded by studying genome sequences from present-day populations that sickle cell anaemia arose around 7,300 years ago.

#### **Bottlenecks and founders**

Scientists have also uncovered population bottlenecks in human history. A bottleneck is when a population becomes constricted to a small number of individuals. When they start a new population, their genomic contributions become more pronounced in that sub-population, and are further amplified in subsequent generations, leading to the founder effect.

In the context of genomic sequences, this would manifest as more shared genetic material between individuals of the population. Founder effects arise from population bottlenecks and also due to other factors, including migration, geographic isolation, and even cultural and marriage practices, such as endogamy and consanguinity.



From a biomedical perspective, founder effects and populations could also confer specific diseases and traits, common and shared between members, at a higher frequency than their prevalence in the general population.

The Ashkenazi Jews are one of the most well-studied founder populations, with a bottleneck event suggesting that a small group of around a thousand-odd individuals gave rise to the modern population. So these individuals have a greater frequency of some genetic diseases due to the founder effect.

Similarly, unique matrimonial practices in India have created around 4,000 endogamous groups, many of whom have strong founder effects. Researchers at the CSIR-Centre for Cellular and Molecular Biology analysed genomic data for Indian populations. In a paper in Nature Genetics, they suggested that many endogamous populations have shared stretches of genomes – more often than do the Ashkenazi Jews – after years of inbreeding.

### **Almost extinct**

In a recent paper in Science, researchers from China used a new computational technique to analyse about 3,000 present-day human genomes from 10 African and 40 non-African populations. They concluded that the modern human population likely originated only from about 1,200 founding ancestors.

The finding challenges previous estimates that predicted this number to be about 100,000. The scientists also found that our ancestors went through this bottleneck about 900,000 years ago and that the drastic reduction lasted for over 100,000 years.

To compare, modern humans are only around 300,000 years old, meaning our early hominid ancestors were almost extinct for a long time.

This super-bottleneck in human evolution coincided with drastic changes in climate, including prolonged periods of glaciation and droughts that could have killed off many other species, diminishing food sources for our ancestors. The recovery of the human population from the super-bottleneck could have been due to development of more hospitable environmental conditions, the control of fire, and, eventually, some form of agriculture practice. The small number of breeding individuals over a long time would also have had severe consequences for the genetic diversity of humans, and likely shaped humanity in ways we do not yet know.

Delving into the secrets of our ancestors using genomic analysis is like peering through a time-travelling telescope, discovering profound insights into the future of our species. By decoding the genetic blueprints of our forebears, we gain a deeper understanding of the genetic innovations that allowed us to become the dominant species on the earth.

This is also a road map for what lies ahead: as we confront challenges such as climate change and infectious diseases, the lessons from our ancestors' survival can become invaluable.

## **PUTTING INVASIVE SPECIES ON THE MENU: APPROACH WITH CAUTION**

Can one of the most destructive forces on the planet, human appetite, actually come to its rescue? That is the hope of London's zero-waste restaurant Silo, which is now serving dishes made out of invasive species such as grey squirrels, Japanese knotweed and signal crayfish.





The idea, according to chef Douglas McMaster, is to “creatively popularise species that are detrimental to the environment”. In other words, make certain unwelcome species, which just happen to be delicious, so popular with gourmands that they are eaten out of those parts of the globe that they have invaded.

History shows that this may not be such an outlandish idea. Over millennia, humans have managed to eat several species in such large quantities as to affect their population, sometimes irreversibly — the woolly mammoth is believed to be one of the earliest examples of a species whose numbers dwindled to the point of extinction thanks to human hunger. Then there is the pungent herb silphium, so loved by ancient Romans that they put it on everything, from drinks to dessert and even medicine, and wrote extensively about it.

But even as it was immortalised in poetry, silphium grew more and more rare — when the last sprig was discovered around 54-68 CE, it was sent to Emperor Nero as a curiosity. More recent is the example of the passenger pigeon, once one of the commonest birds in North America. Far too many pigeon pot pies led to its extinction in 1914.

Yet, this new frontier of ethical eating must be approached with caution. The key thing is to strike a balance that keeps a species’ numbers in check in its new environment, while not affecting its population in its native habitat. As the history of prodigious human hunger shows, it is all too easy to eat a species completely out of extinction.

#### UK’S BACKTRACKING ON FOSSIL FUEL SHOWS DEVELOPED NATIONS’ HYPOCRISY

In 2019, the UK became the first major economy to pass a law that committed the country to end its carbon emissions by 2050. However, several experts reasoned that this carbon neutrality, or net zero, project was a subterfuge, a way of delaying immediate climate action, especially because the country was not on track to meet its previous less ambitious targets.

In response, the then Boris Johnson government decided to advance the ban on new petrol and diesel cars to 2030 – a decade earlier than the UK’s previous commitment. But now, Johnson’s successor, Rishi Sunak, has gone against the recommendations of the Climate Change Committee, the statutory body responsible for monitoring progress on attaining the net zero target, by pushing back the ban on new fossil fuel-driven cars to 2035.

Sunak has maintained that the measure will not stall UK’s progress towards net zero. However, the dilution has drawn criticism from not just environmentalists but also a large section of the car industry, which reckons that the respite to the fossil fuel sector will slow down the UK’s transition to electric vehicles.

At the last UNFCCC CoP, Sunak said that the rising energy prices because of the war in Ukraine are not a reason to go slow on climate change mitigation. He had urged countries to invest more heavily in renewable energy.

The contradiction between the UK prime minister’s stance at the UN meet and his domestic policies indicates a disturbing tendency: Developed country representatives often make the right noises at global summits but they fail to match their words with action at home.

On paper, for instance, the US seems better positioned to meet its Paris Pact targets compared to the four years of climate denial under Donald Trump.



Yet, independent assessments show nearly two years after Joe Biden signed an order to make America carbon neutral by 2050, the country's emissions trajectory remains uncertain. And now, days after it was party to a landmark G20 declaration that affirmed the bloc's commitment to renewables, the UK has watered down its climate plans.

The technical synthesis report of the Paris Agreement's Global Stocktake process — it evaluates the progress on attaining the pact's targets — released a day before the G20 summit, points to the challenges ahead. It notes that at current ambition levels, the world will emit nearly 20 billion tonnes more carbon dioxide than what is required to keep global temperature rise to less than 1.5 degrees Celsius – the Paris Pact's goal. After the UK's backtracking, the task of initiating course correction at the UNFCCC CoP, which begins in Dubai in about two months, has become even more difficult.

## UK'S BELOVED SYCAMORE GAP CUT DOWN: THE TREE AND ITS SIGNIFICANCE

A 300-year-old tree in England that was famous for its beauty and unique location was cut down by a teenage boy, in what is being seen as a deliberate act of vandalism. It resulted in the launch of an investigation and the boy's arrest on Thursday (September 28). His motive is not clear yet.

The sycamore tree was located in a dip between two hills, at a gap in the Hadrian Wall – an old stone structure that is close to the border between England and Scotland – in Northumberland, northern England.

The National Trust, which looks after the preservation of historical and natural places of importance, said that the 'gaps' are essentially channels, which were "naturally chipped away by vast amounts of meltwater flowing beneath the ice sheets that once covered the area," thousands of years ago. The spot was named by an employee of the National Trust when a review of maps was being undertaken.

North of Tyne Mayor Jamie Driscoll posted on X, "People have had their ashes scattered there. People have proposed there. I've picnicked there with my wife and kids. It's part of our collective soul. We must bring whoever did this to justice." The Hadrian Wall's sycamore tree was believed to be the most photographed spot in the Northumberland National Park. It was also seen in the 1991 Hollywood film Robin Hood: Prince of Thieves and its felling is being seen as a cultural loss for the region.

### Roots of Sycamore

Sycamore trees can become extremely tall as they mature – reaching a height of up to 35 metres. They are commonly found in the UK and have leaves similar to that of a maple tree. A sycamore can live for as long as 400 years, according to the UK's Woodland Trust website.

Native to central, eastern and southern Europe, it is believed to have been introduced to the UK by the Romans or in the Tudor era around the 1500s. Widespread planting led to the species becoming extremely common in the UK by the mid-1800s.

"The seed is extremely fertile, so sycamore has spread quickly across the UK and colonised many woodlands to the detriment of native species," the Trust said. As its wood is considered strong and hard, amenable to carving, it is also used to make decoratively carved wooden spoons in Wales. The 'love spoons' are named so as they are given as a romantic gesture.



### UNESCO Heritage site

The Hadrian Wall is part of a larger UNESCO World Heritage Site called the 'Frontiers of the Roman Empire' and is found in the UK and Germany.

"The Roman Empire, in its territorial extent, was one of the greatest empires history has known. Enclosing the Mediterranean world and surrounding areas, it was protected by a network of frontiers stretching from the Atlantic Coast in the west to the Black Sea in the east, from central Scotland in the north to the northern fringes of the Sahara Desert in the south," the website says.

The Empire reached its greatest extent around the second AD. This stone frontier would then be of protective use and often had forts close to it. The larger frontier includes various sections, including the Hadrian Wall, which runs along 118 km. It was built on the orders of Emperor Hadrian (circa AD 122) at the northernmost limits of the Roman province of Britannia. "It is a striking example of the organization of a military zone and illustrates the defensive techniques and geopolitical strategies of ancient Rome," UNESCO states.

## INSIDE THE DIGITAL WORLD OF COOKIES

### The story so far:

The digital world of cookies plays a significant role in any online experience. In the digital realm, cookies help in personalisation and user convenience. These unassuming bits of code, stored on a device when one visits websites, play a pivotal role in shaping any online experience.

### How do cookies work?

Think of cookies as the key to a secure, members-only club. Just like the club bouncer recognises regular patrons and grants them seamless access, cookies remember a person's login information on websites. This means you do not have to repeatedly enter the credentials every time you revisit a site, making it convenient for use.

On websites like Amazon, cookies remember customer's previous interactions; from products they have browsed to purchases they have made.

Armed with this knowledge, Amazon serves up tailored product recommendations and content, making the online shopping feel like a personalised boutique experience.

Consider an enchanted grocery cart that never empties, no matter how many times you step away.

Online shopping carts, fuelled by cookies, offer a similar enchantment. You can add items to the cart, leave the website, and return later to find all the selections waiting patiently, ready for checkout.

Platforms like Facebook and Google use cookies to track online behaviour, ensuring the ads you encounter align with your preferences. While cookies offer undeniable advantages, there is a flip side to considering privacy concerns and the potential for data misuse.

### What are the types of cookies?

Session cookies are temporary cookies like post-it notes for websites. They are stored in the computer's memory only during the browsing session. Once you close the browser, they vanish. Session cookies help websites remember the actions as you navigate, like items in a shopping cart.



Persistent cookies are the digital equivalent of bookmarks. They stay on the device after your browsing session ends. Persistent cookies remember the login information, language preferences, and even the ads you have interacted with.

They are handy for a more personalised web experience.

Secure cookies are only sent over encrypted connections, making them safer from prying eyes. Secure cookies are often used for sensitive data like login credentials.

Third-party cookies are similar—they come from a domain other than the one you are visiting.

They are often used for tracking and advertising purposes, which can be both useful and, at times, intrusive.

#### **What are the uses of cookies?**

Cookies serve a multitude of purposes in the online world.

Firstly, they act as digital ID cards, aiding in user authentication by allowing websites to recognise and keep you logged in during the visit.

Secondly, they foster a sense of personalisation, recalling your preferences such as language choice or website theme. Thirdly, they function as the digital equivalent of a persistent shopping cart, ensuring that items you have added online remain there when you return. Additionally, cookies facilitate website owners in gathering invaluable analytics data about user interactions, enabling them to make enhancements and customise content.

Finally, cookies play a pivotal role in targeted advertising, as advertisers use them to display ads that align with a person's interest and browsing history, making online shopping more enticing. Navigating the world of cookies is not all sweetness; but it comes with its set of challenges.

#### **What are the challenges associated?**

Firstly, privacy concerns arise as cookies could track your online behaviour, which, while often harmless, can sometimes encroach upon your digital privacy. Secondly, security risks loom when cookies are inadequately secured, opening doors for cybercriminals to pilfer the personal information. Thirdly, the era of user consent has dawned, thanks to privacy regulations like the General Data Protection Regulation and The California Consumer Privacy Act, necessitating websites to seek your approval before deploying certain cookie types, resulting in those somewhat irksome pop-ups and prompts. India's newly enacted Digital Personal Data Protection Act 2023 now necessitates websites to acquire explicit consent from users prior to collecting or processing their personal data via cookies. In contrast to earlier regulations that often accepted implied consent as satisfactory, the updated law highlights the significance of transparent and well-informed consent. Fourthly, third-party cookies have sparked debates, prompting many web browsers to curb their usage to safeguard user privacy. Lastly, the data deluge generated by the multitude of cookies can potentially clog the browser, leading to a sluggish web experience.

Conclusively, cookies are both sweet and complex. They play a crucial role in enhancing your online experience, but they also come with privacy and security challenges. As the digital landscape continues to evolve, so will the way cookies will be used and regulated. So, the next time you enjoy a warm, gooey chocolate chip cookie, remember the digital cookies that make your online adventures more personalised, even if they sometimes leave a few crumbs behind.



## HUMANS HAVE BUILT WITH WOOD FOR 4.7L YEARS

Along the banks of the Kalambo River in Zambia near Africa's second-highest waterfall, archaeologists have excavated two logs of the large-fruited bushwillow tree that were notched, shaped and joined nearly half a million years ago.

These artefacts, researchers said on Wednesday, represent the oldest-known example of humans - in this case a species that preceded our own - building wooden structures, a milestone in technological achievement that indicates that our forerunners displayed more ingenuity than previously thought.

The logs, modified using stone tools, appear to have been part of a framework for a structure, a conclusion that contradicts the notion humans at that time simply roamed the landscape hunting and gathering resources.

"The framework could have supported a walkway or platform raised above the seasonally wet surroundings. A platform could have multiple purposes including storage of firewood, tools, food and as a foundation on which to place a hut," said archaeologist Larry Barham of the University of Liverpool in England, lead author of the study published in the journal Nature.

"Not only did the working of trees require considerable skill, the right tools and planning, the effort involved suggests that the makers were staying in the location for extended periods whereas we have always had a model of Stone Age people as nomadic," Barham added.

"While the vast majority of archaeological sites of this age preserve only the stone tools, Kalambo Falls provides us a unique insight into the wooden objects that these tools were being used to create, allowing us a much richer and more complete picture of the lives of these people," said geographer and study co-author Geoff Duller of Aberystwyth University in Wales.

"Wood can be shaped into a variety of forms, making it an excellent construction material that is strong and durable," Barham added.

The earliest-known Homo sapiens fossils date from roughly 300,000 years ago in Morocco. The Kalambo Falls logs were determined to be from about 476,000 years ago.

No human remains were found there, but Barham suspects the artefacts were fashioned by a species called Homo heidelbergensis known from about 700,000 to 200,000 years ago. Homo heidelbergensis possessed a large brow ridge and a bigger braincase and flatter face than earlier hominins - species on the human evolutionary lineage.

The overlying log at Kalambo Falls is about 1.4 metres long, with tapering ends. About 1.5 metres of the underlying log was excavated.

The wood, found in a waterlogged condition, was preserved by a permanent high-water table at the site. Clay sediments surrounding it provided an oxygen-free environment preventing decay.

## RICHNESS OF HUMAN MILK

A new finding about the carefully tailored richness of human milk has shed light on the importance of myo-inositol, a cyclic sugar alcohol. The levels of myo-inositol are high over the first two weeks of lactation and gradually taper off over a period of a few months. In the early stages, the brain of



the newborn is a site of rapid 'wiring', as synapses (or connections between nerve cells) are formed in profusion. Proper synapse formation during early development lays the foundation for cognitive development; inadequate synapse formation leads to development difficulties in the brain.

The group of Thomas Biederer at Yale (PNAS) also matched their findings on myo-inositol induced synapse abundance in cultured rat neurons in test tubes. Here too, myo-inositol promoted the formation of synapses between neurons.

Myo-inositol is a cyclic sugar-alcohol, about half as sweet as sugar. It is abundant in the brain, where it mediates the response to several hormones. Our body needs inositol to form cell membranes. Our body makes myo-inositol from glucose, mostly in the kidneys. However, our body's requirements go up along with the intake of coffee and sugar, and in conditions such as diabetes. The bran of grains and seeds contains a precursor of inositol, phytic acid. Almonds, peas and cantaloupes are also rich sources. In animal models of diabetes, adding myo-inositol back to the diet of inositol-deprived mice helps prevent cataract formation and other complications associated with diabetes. Other constituents of human milk have unique nutritive values too. Dr Shay Phillips and colleagues of the Mead Johnson Paediatric Nutrition Institute, Mexico, have analysed many factors that impact human milk composition. They point out that an essential nutrient, an Omega-3 fatty acid called docosahexaenoic acid (or DHA), varies depending on the food the pregnant mother has been eating. The DHA levels vary in the lactating mother's milk across nations—2.8% in mainland China, 1% in Japan, around 0.4-0.2% in Europe and the U.S., and only 0.1% or so in several developing countries.

Necrotizing enterocolitis (NEC) is a severe gastrointestinal condition that impacts premature or extremely low birth weight infants. Symptoms include inadequate feeding, abdominal bloating, multiorgan failure, and can be fatal. Risk factors consist of bottle-feeding, prematurity, and low birth weight (1.5 kg or less).

The condition arises from a combination of compromised blood flow and intestinal infection. The NEC can be prevented by the utilisation of breast milk and probiotics. Nearly 10% of premature babies develop NEC, with a quarter of affected infants succumbing to the disease. The intestines of premature babies do not produce enough IL-22, which is involved in protecting us from microbial infections.

## REVERSIBLE

Researchers have uncovered a crucial component for restoring functional activity after spinal cord injury. The neuroscientists have shown that re-growing specific neurons back to their natural target regions led to recovery, while random regrowth was not effective (Science). They aimed to determine whether directing the regeneration of axons from specific neuronal subpopulations to their natural target regions could lead to meaningful functional restoration after spinal cord injury in mice. As per a release, the researchers found that merely regenerating axons from these nerve cells across the spinal cord lesion without specific guidance had no impact on functional recovery. When the strategy was refined to include using chemical signals to attract and guide the regeneration of these axons to their natural target region in the lumbar spinal cord, significant improvements in walking ability were observed in a mouse model of complete spinal cord injury.



## WHO REPORT FLAGS DEFICITS IN BP CARE — FACILITATING DIAGNOSIS IS FIRST STEP

A WHO report, released last week, has flagged concerns about hypertension care in India. More than 180 million people in the country are living with the condition but less than 37 per cent are aware of it. Only 30 per cent of those diagnosed with blood pressure start treatment and only 15 per cent manage to keep it under control.

These figures are worrying in themselves — high BP, it is well known, affects the quality of life of a patient. Uncontrolled hypertension over a long time can not only lead to heart attacks and strokes but also affect the kidneys and eyes. Several policy documents have identified the condition as one of the leading causes of mortality in the country. The government has an ambitious programme to reach BP care to more than 70 million patients in the next two years. But, as the WHO report signals, health policymakers should first focus on creating awareness about hypertension.

Blood pressure can go undetected for long periods because most people who have the condition do not show any symptoms. Undiagnosed hypertension is a worry even in parts of the developing world. Studies in India show that patients do not initiate treatment or do not follow the doctor's prescription because they are not aware of the negative consequences of uncontrolled hypertension.

Some studies have also shown that people with BP — often from poor sections of society — discontinue medication after their condition returns to normal. Stopping treatment is not recommended by Indian care guidelines. The awareness deficit amongst patients is, however, not the only worry.

According to the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke, people above the age of 30 should have their BP measured at each interaction with the public health system. This protocol, as many studies have shown, is rarely adhered to. In the past 15 years, as hypertension has spread to small towns and rural parts of the country, the healthcare deficit in these areas has had a bearing on the quality of care for people with high BP. Last year, for instance, a survey by researchers from the Johns Hopkins Bloomberg School of Public Health revealed that only a third of the healthcare providers in rural Bihar could provide quality hypertension care.

Experts suggest that the government's hypertension care programme can make up for the shortfall in doctors and nurses by educating district and village-level community health workers to diagnose the condition, and creating awareness. Policymakers should heed the message of the WHO report.

## INDIANS EAT MORE SALT THAN WHO RECOMMENDATION

The estimated mean daily salt intake in India stands at 8 g (8.9 g a day for men and 7.1 g a day for women) against the World Health Organization (WHO) recommendation of up to 5 g daily, a study has found.

The salt intake was significantly higher among men, those in rural areas and overweight and obese respondents, according to a recent survey by the Indian Council of Medical Research (ICMR) published in the journal Nature.



The study, carried out as part of the National Non-communicable Disease Monitoring Survey in India, noted that the sample population had a low perception of the harmful effects of high salt intake and practices to limit consumption.

“The mean dietary salt intake is high in the Indian population, which calls for planning and implementing control of dietary salt consumption measures. We need to cut down on eating processed foods and those cooked outside home. 10,659 adults aged 18-69 years participated in the survey [response rate of 96.3%],” said Prashant Mathur, lead author of the study and director of the ICMR-National Centre for Disease Informatics and Research.

The study notes that salt intake was higher in employed people (8.6 g) and tobacco users (8.3 g) and those with high blood pressure (8.5 g).

It specifies that reducing the intake is a beneficial and cost-effective way to bring down elevated blood pressure by 25% and advocates a 30% reduction in mean population salt intake by 2025.

It found that less than half of the participants practised measures to control dietary salt intake and the most commonly adopted step to prevent salt overdose was avoiding meals outside home.

#### **Cardiovascular disease**

Cardiovascular diseases account for an estimated 28.1% of the total deaths in India. In 2016, 1.63 million deaths were attributable to hypertension as against 0.78 million deaths in 1990, the study said.

The study was conducted in a nationally representative sample wherein dietary sodium intake was estimated from spot urine samples, a validated method used to assess dietary sodium intake.

The population mean was calculated using sampling weights; thus, the study findings could be generalised at a population level and used to plan and implement dietary salt control measures.

“The information on awareness and behaviour of salt intake was self-reported and could be subjected to information bias. The study did not capture data on the actual dietary sources of salt in food items and condiments for any correlation analysis,” the report said, while declaring the limitation of the study.

### **UNDERSTANDING THE ABCS OF DENGUE FOR CONTROL AND BETTER MANAGEMENT**

Dengue season is here. While prevention is key, seeking medical help on time once you notice symptoms, prompt diagnosis and treatment, and understanding warning signs play a crucial role in management of the vector-borne disease. Data updated till September 17 on the National Centre for Vector Borne Diseases Control website shows the country reported 94,198 cases of dengue and 91 deaths. Kerala, Karnataka and Maharashtra reported the most cases.

“We look for classic symptoms. If they seek treatment during the acute viremic phase - one to three days, we do not admit them,” says E. Theranirajan, dean, Rajiv Gandhi Government General Hospital (RGGGH), in Chennai. “We inform them of the warning signs and when to seek medical help. If they come to the hospital at the end of the third or fourth day, we admit them unless they are stable or have primary dengue. This is because day four to six is the critical phase in dengue and they need to be closely monitored. Their vital signs and haematocrit levels are closely watched,” he adds.





In dengue, day one to three are called the acute viremic phase, while day four to six are the critical phase followed by recovery, he added.

What are the symptoms? Three days of continuous fever, with temperatures more than 101 degree Fahrenheit - a high grade fever that does not respond to routine paracetamol - is one the main symptoms, he said. "Patients will experience varying levels of headache, severe myalgia and maculopapular rash that typically begins on the third day," he said.

Fever and two of the following nausea and vomiting, rash, aches and pains, positive tourniquet test, leukopenia, any warning signs and laboratory confirmed dengue - are probable dengue. The warning signs are intense abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation, mucosal bleed, lethargy and restlessness, liver enlargement and laboratory findings of increase in haematocrit with concurrent rapid decrease in platelet count, he explains.

Dr. Theranirajan, who is a paediatrician, says parents must take children to the healthcare facility if they notice any of the following poor appetite for food or water, less urine than usual, abdominal pain, bleeding in any form, inability to sit up or dizziness in older children, irritability, drowsiness, restlessness and if the feeling of being unwell does not subside. "Frequent vomiting during the first one or two days of fever and low white cell blood count on day two are pointers for early diagnosis of dengue fever," he added. He stressed early recognition of the disease and careful monitoring of IV fluids from the beginning. Healthcare personnel need to familiarise themselves with the three main demarcated phases of dengue febrile, critical and recovery.

"In the critical phase, there will be capillary leakage during which fluid collects in the pleural space around the lungs, abdomen and liver," he said.

He added: "The critical phase is the golden period. There needs to be close monitoring on fluid management. Haematocrit level is the best indicator to assess hydration status. Platelet levels fall as the dengue virus produces anti-platelet antibodies. Dengue has no specific treatment but a supportive line of management."

Absence of fever for 24 hours without the use of antipyretics, return of appetite that dwindled on the fourth or fifth day, visible improvement in the clinical picture, stable haematocrit, three days after recovery from shock, platelet count greater than 50,000 and rising are criteria for discharge.

**PREVENTION:** Dengue is spread through the bite of *Aedes aegypti*. "It usually bites from 5 a.m. to 7 a.m. and from 5 p.m. to 7 p.m.; hence it is important to wear full-sleeved clothes, use mosquito nets and repellents. Check for mosquito breeding sources once every week, clear water stagnations and check the refrigerators trays," he added.

Do not take antibiotics, steroids and non-steroidal anti-inflammatory drugs, and intramuscular injections, he said.

#### LANCET REPORT ON CANCER IN WOMEN IS A WAKE-UP CALL

A new Lancet Commission report on gender inequity in cancer care lays out in stark numbers what has long been known anecdotally. While women have approximately the same burden of cancer as men, with 48 per cent of new cases and 44 per cent of deaths worldwide, the toll it takes on them is disproportionately higher. The authors of the "Women, Power and Cancer" commission's report have examined how asymmetries of power in relation to cancer play out in terms of decision-making, knowledge and economics in 185 countries. The findings are dispiriting: Not



only is cancer one of the top three leading causes of premature deaths among women worldwide, but women are less likely to find the care they need once diagnosed, due to a lack of knowledge and decision-making power. They are also more likely to experience “financial catastrophe” due to cancer. In India, nearly two-thirds of the cancer deaths in women, the authors found, were preventable and 37 per cent were treatable if only they had been caught in time and received optimal care.

These findings show how gender dynamics play out when it comes to health: Globally, when women remain primarily valued for and defined by their reproductive role, women’s health too gets reduced to maternal and reproductive health. Combine this with the fact that, from lack of autonomy to little or limited access to education, employment and healthcare, a range of factors ensures that women — especially from marginalised communities and in nations that rank low on the human development index — rarely go in for the tests and screenings that can help with early detection and treatment. These structural asymmetries play out in other ways too. Consider, for example, the under-representation of women in the oncology workforce as leaders and decision-makers. It is no coincidence that even as the most common cancer among women around the world is breast cancer, very little is still understood about its causes and the occupational and environmental hazards that could lead to cancer in women are woefully under-researched.

Given that a lack of understanding of how women are systematically disadvantaged when it comes to cancer care is at the root, measures that fill these gaps must be a priority, including the collection and updation of sociodemographic data in cancer health and more research on risks that impact women. Also needed is greater sensitivity and responsiveness to the challenges that lie at the intersections of power, status and identity by all stakeholders — right from institutions and policy — and decision-makers at the top to those who raise awareness and are involved in the treatment and care of the affected women.



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