



CURRENT AFFAIRS FOR UPSC

21st to 27th April 2024



INTERNATIONAL

AID FOR WAR

After lengthy negotiations, the United States Senate has passed with bipartisan support a \$95 billion programme to send aid to Ukraine, Israel, and Taiwan. The final vote tally was 79-18, with three Democrats voting alongside 15 Republicans against the bill. The aid package brings together four distinct bills that the House of Representatives passed separately last weekend, respectively supplying almost \$61 billion in aid for Ukraine, above \$26 billion for Israel, over \$8 billion for the Taiwan and the Indo-Pacific region, and one bill relating to Tik Tok. In their current shape, the bills closely resemble an aid package that the Senate had passed earlier this year, an initiative that was ultimately shot down when House Speaker Mike Johnson refused to bring it to the floor of his chamber. Now that it has been passed in the Senate, the legislation will move forward to the desk of President Joe Biden to sign into law, as he has said he intends to do, thus opening the door to helping Ukraine to push back against Russian aggression, to providing wartime assistance to Israel and humanitarian aid to Gaza, and to countering territorial threats in the Indo-Pacific that are linked to China. The fact that the omnibus aid bills package passed with such strength in the Upper Chamber of Congress constitutes a key win for Mr. Biden, Democratic lawmakers, and Senate Republican leader Mitch McConnell, who has toiled for long months to send aid to Ukraine, in the face of opposition from the far-right wing of his own party.

That opposition, which threatens to spoil the plans of the Republican Party 'mainstream', includes the likes of the House Freedom Caucus, comprising ultra conservative members of Congress who broadly support the agenda of former President Donald Trump. They are especially opposed to aid packages, which they consider a threat to their isolationist vision for the U.S. — to the point where Mr. Johnson had to introduce a 'sweetener' into the bill to win their vote, a promise to ban Tik Tok if it did not divest itself of Chinese ownership within a year. That the far-right segment was able to exert its influence on the agenda of Congress to this extent is remarkable, given that it only has a slim majority in the House, and both the Senate and White House are in the hands of the Democrats. In any case, this sizeable aid package is likely to be the last one that is approved for Ukraine and other U.S. allies until after November, which will see the White House, the House of Representatives and one-third of the Senate head to the polls. If Mr. Trump emerges victorious, the rightward slide of the Congress might gather considerable momentum, giving the MAGA movement the teeth that it needs to carry forward its agenda of institutional nihilism.

EXPRESS VIEW: FOR PEACE IN SUBCONTINENT, BOTH ARABIA AND PERSIA MATTER

The direct strikes and counter strikes over the last few days between Israel and Iran may have just done enough to signal political resolve and demonstrate the military capability to attack each other while carefully avoiding the escalation of the conflict — bilateral as well as regional across the Middle East. Both sides took enough precautions to avoid major civilian targets, and communication through various channels may have given enough early warning for effective defences against the strikes. Israel's prime minister, Binyamin Netanyahu, might have liked to escalate the war with Iran and draw the US into the firefight against Tehran. But the Biden Administration's refusal to support that plan and Washington's pressure to avoid retaliation against Iran's attack did not stop Tel Aviv but appear to have tempered the nature of the Israeli response. Iran, comfortable in its proxy war against Israel, has no desire to be drawn into a costly confrontation with the US with unpredictable political consequences. A wider conflagration in the Middle East has been staved off, at least for now.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



The military duel between Israel and Iran has drawn attention to a dynamic in the region that the Indian public debate barely pays attention to — the intensity of the contradictions between Iran and the Sunni Arab states. The willingness of the moderate Arab leaders to help Israel defend itself against Iranian attack — explicitly by Jordan and less so by others — underlines the convergence of Israeli and Arab interests in countering Iran’s brazen destabilisation of the region through its various proxies like the Hamas. It was this shared regional interest that produced the Washington-brokered Abraham Accords in 2020, which sought to promote reconciliation between Israel and the moderate Arab regimes. It is noteworthy that the Abraham Accords have survived the horrendous Israeli military campaign in Gaza that has taken at least 30,000 lives.

India, which has supported the Abraham Accords, does not want to be drawn into the conflict between Gulf Arabs and Iran. This is not surprising given the high stakes it has in the relations with both sides. After all, both Arabia and Persia matter for peace and prosperity in the Subcontinent. That does not mean India should remain a passive bystander in the Middle East. Instead, it should put its full diplomatic weight behind the Arab plans for a two-state solution in Palestine that could find a way between Tehran’s cynical hijacking of the issue and Tel Aviv’s equally cynical refusal to abide by the promises it has made on Palestinian statehood. The Arab initiative involves several elements — an immediate ceasefire in Gaza, the insertion of an Arab peace force, an Israeli commitment to an irreversible roadmap for a Palestinian state, the mobilisation of Arab resources for the reconstruction of Gaza and the West Bank, and US security guarantees for the Gulf. To be sure, the Middle East is littered with failed initiatives, but the current crises in the region may have opened some wiggle room for thinking boldly about peace. For India, the stakes in the Arab-Israeli peace today are higher than ever before.

EXPRESS VIEW ON UK’S RWANDA BILL: CRUELTY AS POLICY

Every month for the last 10 months, refugees and asylum-seekers have died trying to get into the UK. Desperate to escape existential dangers — crippling poverty, political persecution, war and climate change — the refugees are preyed on by agents and make the journey across the treacherous waters of the English Channel on small boats. Hours after the Rishi Sunak government’s Rwanda Bill was passed by the British parliament, five people including one child died on such a crossing. PM Sunak said “[The incident] is just a reminder of why my plan is so important... We want to prevent people making these very dangerous crossings.” There is little doubt that the UK, like much of the developed world, is facing an influx of undocumented migrants. So far this year, the number of people trying to make it into the country has grown by 25 per cent over the same period last year. However, there is a cruel irony in using the suffering of those who will be worst affected by the law to defend it.

The Bill has its origins in a policy formulated by former PM Boris Johnson in 2022, under which the UK government could deport some asylum-seekers to Rwanda, where they will be assessed for permanent resettlement. The British government has reportedly paid close to 300 million pounds to the Rwandan government for this scheme. The UK supreme court, however, struck down the policy in light of Rwanda’s poor human rights record. The Safety of Rwanda Bill is meant to address “the Court’s concerns and will allow Parliament to confirm the status of the Republic of Rwanda as a safe third country”. The UNHCR has asserted that “Such arrangements...are contrary to the letter and spirit of the Refugee Convention.”

Setting aside the legal and moral issues, the Rwanda Bill is bad policy. A relatively small number of undocumented migrants coming into the UK will fall under the law’s ambit. Those willing to risk their lives to escape their homes — and those that exploit them — are unlikely to be deterred.



At an initial cost of 1.8 million pounds per asylum-seeker, scaling the policy is not financially viable. Then there's the fact that many, if not most, of the prospective deportees will likely approach the British courts for relief, burdening the system and exchequer. What the UK — like so many other developed countries — needs is a streamlined process for asylum and immigration. As a former Chancellor of the Exchequer and investment banker, Sunak likely knows this. He must realise xenophobia is a poor basis for policy.

PORTUGAL CELEBRATES 50 YEARS OF DEMOCRACY AMID FAR-RIGHT SURGE

Veteran military officer Captain Joaquim Correia Bernardo, 84, remembers the revolution that toppled Portugal's fascist dictatorship five decades ago as if it were yesterday. He was in his thirties when he helped organise the April 25, 1974 military coup that returned Portugal to democracy after 48 years of authoritarian rule.

— The “Carnation Revolution” was a bloodless coup as soldiers placed blossoms in the barrels of their guns. It ended the dictatorship in Portugal.

— This revolution led to the collapse of Portugal colonial rule overseas, notably in Africa, where wars against national liberation movements had exhausted the military and drained state coffers.

For Your Information:

— President of Portugal Marcelo Rebelo de Sousa has said that Portugal was responsible for crimes committed during transatlantic slavery and the colonial era, and suggested there was a need for reparations.

— The group of around 20 non-governmental organisations of Haiti is seeking a new independent commission to oversee the restitution of the debt paid (1804-1947) to France, which they refer to as a ransom, at Geneva for a U.N. Permanent Forum on People of African Descent (PFPAD).

50 YRS OF PORTUGAL'S CARNATION REVOLUTION: HOW EUROPE'S LONGEST DICTATORSHIP WAS OVERTHROWN

Thousands spilt on to the streets on Thursday (April 25) to celebrate the 50th anniversary of Portugal's ‘Carnation Revolution’ that toppled the longest fascist dictatorship in Europe and ushered in democracy in the country. Antonio Oliveira Salazar ruled Portugal from 1932 to 1968, but the regime lasted for another six years under his successor Marcelo Caetano, finally crumbling on April 25, 1974.

Prof turned prime minister

A professor of political economy at the University of Coimbra, Salazar became Portugal's Finance Minister in 1928. Under him, the financially stressed country made major progress — within a year, Salazar balanced the budget and stabilised Portugal's currency.

He was appointed as Prime Minister of Portugal by the then President and military dictator Antonio Oscar de Fragoso Carmona in 1932, and within a year managed to concentrate political power with himself. In 1933, Salazar established the Estado Novo (literally, “New State”) — a conservative, corporatist, and nationalist regime ostensibly built on the values of Portugal's traditional Catholic faith, and with the purpose of maintaining the Portuguese empire, most importantly in Africa.



From 1934 to 1965, Salazar won 100% of all valid votes in Portugal's National Assembly elections, and ruled with an iron fist.

Revolution, decolonisation

The almost bloodless revolution was conducted by a group of junior army officers who wanted democracy, and to put an end to long-running wars against independence movements in the African colonies of Angola, Mozambique, and Guinea-Bissau.

They regarded those wars, which were killing thousands of young Portuguese conscripts, as unjust and unwinnable, especially given the rapid dismantling of all major European empires. The military coup by the "April's Captains" group touched off rapid decolonisation, ending more than five centuries of Portuguese empire in Africa.

Far Right's Salazar affection

Lisbon University political scientist Antonio Costa Pinto told Reuters that while most Portuguese are proud of the April 25 revolution, the recent surge in support for the populist, anti-immigration Chega party is the "elephant in the room". "Chega attracts those who have a revisionist view of history with the idea that colonialism and the empire were not bad, and that the glorious Portuguese past and its symbols should be valued," Costa Pinto said.

A study published on Friday by Lisbon's Institute of Social Sciences and research university ISCTE found that 23% of respondents felt that if current political leaders followed the "ideals" of Salazar, Portugal might "regain its greatness". And Chega itself makes frequent public use of Salazar's motto "God, patriotism and family", to which the party has added "work".

Founded in 2019, Chega is the third largest party in Portugal, having quadrupled its cohort of lawmakers to 50 in March's election. Chega has capitalised on the housing crisis unleashed by steadily rising rents as well as low wages, sagging health care and cases of alleged corruption involving the mainstream parties in Western Europe's poorest country.

EXPERT EXPLAINS: HOW A 'NEW' JAPAN PROMISES TO TRANSFORM ASIAN GEOPOLITICS

Japan's Prime Minister Fumio Kishida's address to the United States Congress earlier this month, and the developments from his summit meeting with President Joe Biden, announced the arrival of a new, assertive Japan to the world. Japan is changing — and why this matters.

What is the change that Japan is undergoing?

After World War II, a defeated and chastened Japan adopted a policy of pacifism — it avoided building significant armed capability, limited its defence expenditure, and refused to participate in military conflicts anywhere. This pacifism was rooted in Japan's determination to expiate its militarism and imperialism in the pre-War decades.

Japan's pacifism was compensated by its bilateral military alliance with the United States. Being a protectorate of the US in Asia, Japan was free to focus its energies on rebuilding its economy and becoming a commercial and technological powerhouse by the late 1960s. By the turn of the 1970s, Japan became the world's second largest economy, behind only the US.



Today, Japan is set to become a major military power, transform its famed civilian industrial capability into a military industrial complex, and turn from being a US protectorate into an American partner and a significant contributor to Asian and Indo-Pacific security.

This is the second Japanese transition over the last decade.

In the mid 2000s, Japan began to articulate ideas for a new security architecture in Asia. Take for instance the concept of the Indo-Pacific, the single most important geopolitical idea of the 21st century. The late Prime Minister Shinzo Abe first spoke about the strategic unity of the two oceans (Indian and Pacific) during his visit to India in 2007. Since then, Japan has invested enormous diplomatic, political, and financial resources to popularise this geopolitical construct that was eventually adopted by Australia, Indonesia, India, and the United States.

In the second transition unfolding today, Japan is matching its strategic ideas with military resources and the political will to actively reshape the regional security order. Kishida's visit to Washington DC was in effect the unveiling of a new geopolitical Japan.

What is the reason for this radical change?

The US has long pressed Japan to take a more active security role in Asia. But Japan, comfortable with its commercial focus, has been unwilling. A mix of external and internal factors have contributed to its reorientation in the 21st century.

On the external front, four elements have come together: the rise of China and its military assertion, especially on the territorial disputes with Japan; the deepening military bonds between Beijing and Moscow and the coordination of their policies in North East Asia; the growing military capabilities of North Korea; and the fears triggered by the Trump Administration that the US could withdraw its security protection to Japan and other Asian allies. Together, these factors have profoundly altered Japan's regional security environment, and demanded fresh thinking.

Internally, this situation strengthened conservatives in Tokyo, who wanted to see Japan becoming a 'normal power'. They argued that Japan has done enough to prove its credentials as a responsible citizen of world affairs, and the time has come for it to take responsibility for its own security, and to contribute to the regional order.

What exactly is Japan doing to become a geopolitical power?

First, Japan has done away with the historical cap on defence expenditure, unofficially at 1% of its GDP. According to data from the World Bank, in 2020, Japan's military expenditure touched 1% of GDP for the first time in six decades. In 2022, it touched 1.1%. Kishida's government has pledged to double annual defence spending to around 10 trillion yen (\$68 billion) by 2027, which would make Japan the world's third-biggest military spender after the US and China.

Second, Japan has acquired, and is in the process of further acquiring, its own counter-strike capability in the form of cruise missiles. In January, it signed a deal with the US to purchase up to 400 Tomahawk cruise missiles, capable of striking deep into China and North Korea. From relying entirely on the US to building up its own deterrent capabilities is a major shift.

Third, late last year, Japan's cabinet eased its self-imposed ban on exports of lethal weapons to friendly countries. This has paved the way for the leveraging of Japan's immense manufacturing and technological base to aid its allies at a time when their own production capacities cannot keep up with the likes of China and Russia.



For instance, immediately after the easing of the export ban, Japan approved a shipment of Japanese-made Patriot missiles to the US. Along with the United Kingdom and Italy, Japan is leading the Global Combat Air Programme, a multinational initiative to develop the BAE Systems Tempest, a proposed sixth-generation stealth fighter. During Kishida's visit, Japan and the US finalised the creation of a joint military industrial council to facilitate the co-production of weapons.

Fourth, Japan and the US are in the process of revising the command-and-control framework governing their defence forces, with plans to eventually significantly integrate the command structure. Currently, the US operates military bases in mainland Japan and Okinawa island, but its command structure is in Hawai'i, the headquarters of the US Indo-Pacific Command. A joint operations command will be set up in Japan going forward.

Have there been changes in Japan's diplomatic posture?

First, Japan has made attempts to end disputes with South Korea, inherited from Imperial Japan's occupation of the Korean peninsula from 1910 to 1945. The reconciliation has facilitated greater regional security coordination, and has helped the US move from a system of bilateral alliances in Asia to a regional security network, in which US allies work with each other.

Second, Japan has been one of Ukraine's strongest supporters in the war with Russia. It has offered Ukraine a lot of aid for reconstruction, and has sent some weapons as well. Japan has been alone in Asia to make a clear case for defending Ukraine's territorial sovereignty. Kishida has often said that "Ukraine could be the future of Asia" if the principle of respecting territorial sovereignty is not defended in Europe.

In his address to Congress, the Japanese leader almost chastised Republicans for their reluctance to extend more support to Ukraine. "...I detect an undercurrent of self-doubt among some Americans about what your role in the world should be," Kishida told Congress. "Ukraine of today may be East Asia of tomorrow... Japan will continue to stand with Ukraine," he said.

It was a powerful statement, signalling Japan's willingness to weigh in on the US domestic debate on Ukraine, and to encourage Republicans in Congress to rethink their opposition to sending more military assistance to Kyiv.

What are the implications of this 'new' Japan? Will the push last?

Japan was among the most powerful countries in World War II, with a fearsome military that marched all the way to India's border. After decades of pacifism, a politically active and militarily more capable Japan will inevitably rearrange the regional security calculus.

Despite the widespread fear that the policies outlined by Kishida, whose political stature has been in decline at home, may not last, structural factors are likely to ensure broad continuity in Japan's new orientation. The potential return of Donald Trump to the White House is also intensifying the effort in Tokyo to insure against an American turn towards isolationism.

How has India reacted to this change in Japanese policy?

New Delhi has not issued a formal reaction to the recent changes in Japan's policy. But India has no quarrels with Japan's historical role in Asia. Many in the Indian national movement, including Subhas Chandra Bose, turned to Imperial Japan for support in the war for independence from



Great Britain. In the early years of independence, Prime Minister Jawaharlal Nehru insisted that both China and Japan must play their rightful role in shaping the future of post-war Asia.

India's bilateral relationship with Japan has acquired a political character over the last two decades. But the potential for military cooperation between the two countries remains unrealised, and there is scope for New Delhi and Tokyo to discuss military-industrial collaboration.

At the end of the day, a politically resolute and militarily strong Japan that can build a stable Asian equilibrium is a positive development from the Indian perspective. It contributes to India's objective of building a multipolar Asia in a multipolar world.

STABILITY IN MALDIVES

There are several important messages from the win by Maldives President Mohammad Muizzu's party, the PNC, in this week's parliamentary elections. The PNC's "super-majority" — over 70 of 93 Members of Parliament or People's Majlis, including allies and independents — also eases Mr. Muizzu's path to passing laws and even making constitutional amendments. The opposition in the Majlis, led by the former ruling Maldivian Democratic Party (MDP), that was perceived as "pro-India" won just 12 seats, while parties floated by the former Presidents, Abdullah Yameen and Mohammad Nasheed drew a blank. Mr. Muizzu will be in the spotlight for how he wields the near-absolute power, in a country which has seen authoritarian rule for decades. The results also indicate widespread approval by Maldivians of decisions he has made since he was elected in November 2023 including his international visits to China, Turkey and the UAE, and receiving U.S. senior officials, while keeping a relative distance from India. During his meeting with Prime Minister Narendra Modi in December, he insisted on a total withdrawal of Indian troops maintaining aircraft for humanitarian operations in the archipelago, which he has now enforced. He has also scrapped a hydrography agreement with India, while strengthening ties with China, to "rebalance" and end dependence on any foreign power. Meanwhile, Maldivian leaders and commentators have expressed concern over majoritarian trends in India. Derogatory comments about Mr. Modi by Maldivian Ministers have added to the unease in India. Indian tourist figures have also dropped.

With the Maldivian results in, and the Indian election results in June, New Delhi and Male have an occasion to try and mend their frayed ties. Relations have been traditionally good, and should not oscillate with changes in each government. Unfortunately, this has been the trajectory for the past decade. Mr. Muizzu's statement that rather than "pro-India" or "pro-China", he intends to build a "pro-Maldives" policy must be tested against his actions while giving him time to prove that none of those actions is to the detriment of India's security or regional peace. Given Maldives's economic troubles and development needs, its challenges with climate change, and its geographical allure for the U.S. and China, it is only a matter of time that the relative comfort of stronger ties with India and its policy of sustainable financing and support, becomes apparent to Male. To be truly successful, a mutual policy of "Neighbourhood first" can only be voluntary and based on mutual trust and interests.

WHY MYANMAR IS NOW SEEING ITS WORST FIGHTING IN MORE THAN TWO YEARS

The Ministry of External Affairs on Thursday expressed "deep concern" over the ongoing fighting in the Rikhawdar area in Myanmar's Chin State, close to the border with India opposite Zowkhathar in Mizoram, which has led to Myanmarese nationals crossing to the Indian side.



Myanmar has been in flames ever since the military seized power on February 1, 2021, the day the new parliament elected after the November 2020 elections was to convene. Ethnic Armed Organisations (EAOs) have joined armed civilian groups called People's Defence Forces (PDFs) — allied with the country's self-declared National Unity Government in exile — to take on the military.

Over the past week, the resistance forces have captured two towns close to the India-Myanmar border after fierce fighting. The fall of the latter, Rikhawdar, has resulted in the influx of some 5,000 refugees into Mizoram.

When and how did the current round of fighting begin?

It began on October 27 with surprise attacks in Shan State in North Myanmar along the border with China, by the Three Brotherhood Alliance, a front of three EAOs — the Myanmar National Democratic Alliance Army (MNDAA), the Ta'ang National Liberation Army, and the Arakan Army. The offensive was named Operation 1027, after the date on which it was launched.

The resistance forces are reported to have overrun more than 100 military outposts in Shan State and seized control of crucial border towns and checkpoints, including Chinshwehaw, a critical point on the China-Myanmar border trade route, which is an important source of revenue for the junta. The rebels are now pushing towards Laukkai, the capital of Shan state's Kokang region, where the MNDAA has been active for more than three decades.

Fighting has also broken out elsewhere in the country, led by various local resistance forces — in the Rakhine State in West Myanmar, Kayin State in South-East Myanmar, Sagaing region in North West Myanmar bordering Manipur, and Chin State in West Myanmar bordering Mizoram.

What does this situation mean for India?

India has so far walked a fine line between expressing concern at the “interruption” of democracy in Myanmar, and engaging with the junta to protect its “vital interests”. In the current situation, the immediate concern for India is the influx of Myanmarese nationals in the border states of the Northeast at a time when the situation in Manipur remains volatile.

The anti-junta forces have captured two important towns close to the only two border crossing points between Myanmar and India — Rikhawdar, close to Zokhawthar in Mizoram, and Khampat in Sagaing region, around 60 km from Moreh in Manipur. The latter is also part of the proposed India-Myanmar-Thailand trilateral highway project.



NATION

EXPRESS VIEW ON CHILD CARE LEAVE: BRINGING UP A CHILD

Underscoring the centrality of the provision of child care leave (CCL) to women's participation in the workforce, the Supreme Court bench of Chief Justice of India D Y Chandrachud and J B Pardiwala delivered a judgment that has significant implications for female employment in the country. The Court was hearing a plea by an assistant professor in a government college in Himachal Pradesh who had been denied CCL – introduced by the sixth CPC for central government employees in 2008 – to tend to her child suffering from a rare genetic disorder because the state government has no such provision and she had exhausted her leave quota. The SC has asked the state chief secretary to form a committee to initiate policy changes and noted, "Participation of women in the workforce is a matter not just of privilege but a constitutional entitlement protected by Article 15. The state as a model employer cannot be oblivious to the special concerns which arise in the case of women who are part of the workforce."

The Periodic Labour Force Survey Report 2022-23 shows that the female labour force participation rate jumped to 37 per cent, a significant increase of 4.2 percentage points compared to the previous year. Yet, in a country that hopes to capitalise on its "nari shakti", there are not enough provisions to ensure that this passage is smooth. It is no secret that women, whether employed or otherwise, carry a disproportionate burden of care responsibilities at home and outside of it. According to a study undertaken by Karmannaya Counsel, CII and Nikore Associates in partnership with the Ministry of Women and Child Development and Bill and Melinda Gates Foundation to address the lacuna in the system, women in India perform over eight times the amount of unpaid work, valued at 15 per cent to 17 per cent of GDP notionally. Motherhood is exacting, but so is housekeeping and elderly care, demanding, necessarily, the ability to be everything everywhere all at once. It often means that women drop out of the workforce mid-career or take a hit in their professional growth.

While progressive legislation is essential to plug the gaps, other aspects need to be addressed as well. By 2050, the share of senior citizens in India is expected to rise to 20.8 per cent of the population. Investing in infrastructure that will ensure ease of access to affordable and specialised child and elder care is crucial to meet the challenges. There is also the important task of fostering a gender-neutral approach to care work, including and not limited to child care, that is integral to dismantling stereotypes and taking into account the changing nature of families. The extension of CCL to all employees, irrespective of gender, would be a step forward.

COURTING ACTION

"The Union has to activate itself," Justice Hima Kohli, who is heading the Supreme Court Bench hearing the case against Patanjali Ayurved and its leaders Acharya Balkrishna and Baba Ramdev, observed on April 23 in the context of the government not having taken any action against the company for publishing advertisements touting untested, pseudoscientific cures for COVID-19, diabetes, and other conditions. The Bench also took cognisance of a report that the baby formula Nestlé sells in India contains more sugar than its corresponding product in Europe, and expanded the Patanjali Ayurved matter's remit to include all fast-moving consumer goods (FMCG) companies publishing misleading advertisements. India has been recording a surge in non-communicable diseases (NCDs) thanks to the easy availability of ultra-processed foods, together with sedentary lifestyles. Manufacturers have also been known to include some vitamins, say, in



order to escape scrutiny, but their product is still 'junk'. In the last month, the apex court has sought public apologies from Patanjali Ayurved et al. for advertising misleading claims even after the Court directed them to stop; the Bench chided the defendants for publishing a diminutive advertisement. There is some uncertainty now over whether the Court will accept the latest apology, but herein lies the rub.

The expectation that the Court will "activate" itself because the existing apparatus to regulate, report, and sanction misleading advertisements is complaints-led as well as dysfunctional is dangerous. The Court asked the Ministry of AYUSH why it did not act on the allegedly bad advertisements the Advertising Standards Council of India had flagged; the Council itself has no instruments by which it can force compliance. The Food Safety and Standards Authority of India has specified the permissible thresholds of ingredients in various food products yet is infamously reluctant to pull up errant manufacturers; it also remains understaffed, underequipped, and underfunded. The task of regularly calling out unscientific claims has thus fallen to variously informed members of civil society, from ill-qualified 'influencers' to licensed medical practitioners, yet they do not enjoy protection from retributive, expensive, and tedious legal action. As such, FMCG marketing should be subject to prompt enforcement and timely action. Its absence is responsible for the proliferation of unfalsifiable claims regarding nourishment as well as the growing disunion between India's concern about NCDs and the foods available to the people. But the courts should only review legislation, not lead it. Quick, exemplary action against violators in the cases before it, and not overenthusiastic encroachment of legislative and executive power, is what is expected of the judiciary.

CASE BEFORE SUPREME COURT: CAN GOVT REDISTRIBUTE PRIVATELY OWNED PROPERTY?

As wealth distribution dominates news headlines in India, the Supreme Court (SC) on Wednesday (April 24) began hearing an unrelated case about whether the government can acquire and redistribute privately owned properties if they are deemed as "material resources of the community" — as mentioned in Article 39(b) of the Constitution.

Important minority opinion

Falling under Part IV of the Constitution titled "Directive Principles of State Policy" (DPSP), Article 39(b) places an obligation on the state to create policy towards securing "the ownership and control of the material resources of the community are so distributed as best to subserve the common good". DPSP are meant to be guiding principles for the enactment of laws, but are not directly enforceable in any court of law.

Since 1977, the apex court has weighed in on the interpretation of Article 39(b) on multiple occasions — most notably, in *State of Karnataka v Shri Ranganatha Reddy* (1977). This case saw a seven-judge Bench, by a 4:3 majority, holding that privately owned resources did not fall within the ambit of "material resources of the community". However, it was Justice Krishna Iyer's minority opinion which would become influential in years to come.

Justice Iyer had held that privately owned resources must also be considered material resources of the community. "Every thing of value or use in the material world is material resource and the individual being a member of the community his resources are part of those of the community. To exclude ownership of private resources from the coils of Article 39(b) is to ciphers (make hidden) its very purpose of redistribution the socialist way," he said.



SC affirms Justice Iyer's opinion

This interpretation of Article 39(b) was later affirmed by a five-judge Bench in *Sanjeev Coke Manufacturing Company v Bharat Coking Coal* (1983), where the court upheld central legislation that nationalised coal mines and their respective coke oven plants relying on what Justice Iyer had ruled. It held that the provision “takes within its stride the transformation of wealth from private-ownership into public ownership and is not confined to that which is already public-owned”.

This judgment did not mention that Justice Iyer's opinion was in the minority. Nor did it mention that the majority specifically distanced themselves from it (“We must not be understood to agree with all that he [Justice Iyer] has said in his judgment in this regard,” Justice N L Untwalia's majority opinion had held at the time).

The concurring opinion of Justice Paripoornan in the nine-judge Bench case of *Mafatlal Industries Ltd v Union of India* (1996) also relied on the interpretation of Article 39(b) offered by Justice Iyer and the Bench in *Sanjeev Coke Manufacturing*.

He held “the words ‘material resources’ occurring in Article 39 (b) will take in natural or physical resources and also movable or immovable property and it would include all private and public sources of meeting material needs, and not merely confined to public possessions.”

Cessed properties dispute

The case currently before the SC arose out of a challenge to the 1986 amendment to the Maharashtra Housing and Area Development Act, 1976 (MHADA) by owners of ‘cessed’ properties in Mumbai.

MHADA was enacted in 1976 to address a major problem in the city — old, dilapidated buildings housing (poor) tenants despite becoming increasingly unsafe. MHADA imposed a cess on the buildings' occupants, which would be paid to the Mumbai Building Repair and Reconstruction Board (MBRRB) to oversee repair and restoration projects.

In 1986, invoking Article 39(b), Section 1A was inserted to MHADA to execute plans for acquiring lands and buildings, in order to transfer them to “needy persons” and the “occupiers of such lands or buildings”. The amendment also inserted Chapter VIII-A to the legislation, which contains provisions allowing the state government to acquire cessed buildings (and the land they are built on) if 70% of the occupants make such a request.

Over three decades with SC

The Property Owners' Association in Mumbai challenged Chapter VIII-A of the MHADA at the Bombay High Court claiming that the provisions violate the property owners' Right to Equality under Article 14 of the Constitution. The court, however, held that laws enacted in furtherance of DPSP could not be challenged on the grounds that they violated the right to equality, as per Article 31C of the Constitution (“Saving of laws giving effect to certain directive principles”).

The Association appealed the decision in the SC in December 1992. In the apex court, the central question became whether “material resources of the community” as per Article 39(b) includes privately owned resources — which would include cessed buildings. In March 2001, a five-judge Bench heard the case and referred it to a larger Bench, stating that the views expressed in *Sanjeev Coke Manufacturing* require reconsideration.



In February 2002, a seven-judge Bench took note of Justice Iyer's interpretation, and stated "we have some difficulty in sharing the broad view that material resources of the community under Article 39(b) covers what is privately owned," and referred the challenge to Chapter VIII-A of the MHADA to a nine-judge Bench — which is now hearing the matter.

TRUST IN MACHINES

The Supreme Court of India's rejection of the demand for 100% verification of the paper trail left by the votes cast through electronic voting machines comes as no surprise, as there is no hard evidence that the current verification system suffers from any irremediable lacuna. The two concurring judgments of the Bench reiterate the faith the judiciary has so far reposed in the integrity of the electoral process, especially after the introduction of the voter verifiable paper audit trail, or VVPAT. In the process, the Bench also rejected the idea of reverting to paper ballots, as such a measure would indeed be regressive and negate the gains from the elimination of vulnerabilities associated with paper ballots. This is not the first time that the Court has declined to interfere with the system in place; it had earlier refused to order 50% verification of the paper trail in one case and 100% verification in another. The Court has utilised this petition to review the administrative and technical safeguards in the system and found nothing to impair its faith in it. The two directions given by the Court address the other serious apprehensions: that the symbol loading units be secured and kept in safe custody for 45 days after declaration of results and that the top two losing candidates could seek a verification of the micro-controllers in 5% of the EVMs in specified polling booths so that tampering, if any, may be detected.

In a 2013 ruling, the Supreme Court held that "a paper trail is an indispensable requirement of free and fair elections". In another case, it favoured the increase in the number of polling stations in which VVPAT verification would be done from one per Assembly constituency or segment to five. The introduction of a paper audit trail itself was in response to apprehensions that voters had no way of ascertaining if their votes were recorded correctly. It is somewhat ironical that the verification system put in place to address such fears itself has become a bone of contention as to the extent to which the paper trail has to be verified. Justice Sanjiv Khanna, in his opinion, has recorded suggestions that VVPAT slips may be counted through machines, and that symbols loaded in the VVPAT units may be barcoded for easy counting in future. It ought to be clear that such technological advancement alone can make the process suspicion-proof. A larger point to be made is that the apprehensions and suspicions of possible manipulation indicate a level of mistrust in the Election Commission of India not seen in the past. Voter confidence in the system of voting and counting is one thing, but the need for the election watchdog to be seen as impartial is quite another.

EVM

The EVMs, which have now become a contentious subject, had been hailed as a convenient and fast method for voting as well as an antidote to the phenomenon of "booth capturing", which had emerged as a major challenge during the late 1960s and early 1970s. "The ECI stepped in and then Chief Election Commissioner S.L. Shakhdar proposed the EVM in 1977. A Hyderabad-based PSU called the Electronics Corporation of India Ltd (ECIL), under the Department of Atomic Energy, developed a machine prototype in 1979", says former CEC N. Gopalswami. It was used for the first time in 1982, in the Assembly constituency of Paravur in Kerala in 50 out of 123 booths.



Transparency and verifiability

As parties kept casting doubts over the security of the EVMs, the ECI started exploring the possibility of introducing a Voter-Verifiable Paper Audit Trail (VVPAT) system to increase transparency and verifiability in the poll process. In 2011, a prototype was developed and demonstrated before the ECI and its expert committee.

After multiple field trials and fine tuning, in 2013, the ECI approved the design of the VVPAT and in August 2013, the Central government notified amended Conduct of Elections Rules, 1961, enabling the ECI to use VVPAT with EVMs. The VVPAT was used with EVMs for the first time in a bye-election from 51-Noksen Assembly Constituency of Nagaland.

Subsequently, the poll body through a manual stipulated that one randomly selected polling station in each Assembly segment or constituency shall undergo mandatory verification by tallying EVM votes with VVPAT slips. Later, in 2019, the Supreme Court ordered that the mandatory VVPAT verification be raised from one to five polling booths in each Assembly segment. The 2019 Lok Sabha elections became the first general election to have 100% of EVMs being attached to VVPATs.

For Your Information:

— EVMs are assembled by two PSUs — Electronics Corporation of India Ltd and Bharat Electronics.

HAND-HOLDING INDIAN DEMOCRACY

The most defining phase of the ECI could be the tenure of T.N. Seshan as the CEC when he sought to give teeth to the implementation of the Model Code of Conduct (MCC), which was till then seen as a mere academic set of rules. The MCC originated in Kerala in 1960 when a small set of 'Dos and Don'ts' for the Assembly election were circulated. A 'Minimum Code of Conduct' was circulated for the political parties for the first time under the signature of the Chief Election Commissioner on September 26, 1968, before the mid-term polls for various legislative Assemblies were held in February 1969, according to Leap of Faith, a book by the poll body on the journey of Indian elections.

In 1979, the ECI, in consultation with political parties, further amplified the code, adding a new section placing restrictions on the "party in power" to prevent cases of abuse of a position of power to get undue advantage over other parties and candidates.

Mr. Seshan started implementing the MCC effectively. Indian politicians, it was jokingly said then, "feared only God or Seshan".

It was also during his tenure that electors' photo identity cards (EPICS) were introduced in 1993. The then CEC even threatened to cancel elections if State governments failed to distribute the EPICS before the polls, according to the book. His tenure also saw the ECI becoming a multi-member body. On October 1, 1993, M.S. Gill and G.V.G. Krishnamoorthy were appointed as Election Commissioners by then President Shankar Dayal Sharma. The move was seen by many as a bid to "clip his wings". Though Seshan had opposed the move, the Supreme Court upheld the government's decision to appoint the Election Commissioners.



Indelible mark

That Seshan left an indelible mark on the electoral reforms scene can be gauged by the fact that the same Supreme Court, while mooted the idea of including the Chief Justice in the appointment committee to select the Chief Election Commissioner to ensure “neutrality”, said in November 2022 that it wanted a CEC of strong character like the late T.N. Seshan who “does not allow himself to be bulldozed”. The top court’s proposed panel, which would have included the Prime Minister, the Chief Justice of India and the Leader of Opposition, though, did not fructify with the government bringing in the ‘Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023” last year, forming a selection committee, which did not include the CJI. Till then, the CEC and other ECs were appointed by the President of India.

Interestingly, the first appointments to be made under the new law were those of Gyanesh Kumar and S.S. Sandhu after the sudden resignation of Election Commissioner Arun Goel, who quit citing personal reasons in March. The Hindu had reported that he quit over apparent differences with CEC Rajiv Kumar. The other vacancy had been that of EC Anup Chandra Pandey who had retired.

Controversies, though, have not put a spanner in the works of the ECI’s pursuance of keeping the poll process up to date and voter-friendly. The launch of electronic electoral photo identity card (e-EPIC) in 2021, photo electoral rolls and home voting for people with disabilities and those above 85 years of age are just some of the initiatives.

SENDING NOTICE TO PARTY, NOT CANDIDATE, MARKS SHIFT IN EC RESPONSE

The Election Commission’s first ever notices to political parties for alleged Model Code of Conduct (MCC) violations by their star campaigners marks a significant shift in the institution’s response to such complaints. In the past, the EC has sent general advisories to parties but whenever there is an MCC violation complaint against an individual, the notice goes to the individual rather than the party.

In the notices, EC has underlined that individual star campaigners are responsible for their own speeches and the EC may, on a “case-by-case basis,” hold political parties accountable for any MCC violations by their campaigners.

— The change in EC’s stance is more significant against the backdrop of high-profile political leaders who have been served notices directly by the Commission for MCC breaches in the past.

— However, it’s pertinent to note that no sitting Prime Minister, to date, has been issued a notice on a MCC violation complaint.

— According to an EC official, Thursday’s notices are a part of a “calibrated approach” that Chief Election Commissioner Rajiv Kumar had announced during his press conference on Lok Sabha elections on March 16, where tougher actions would be taken against campaigners who are “repeat offenders.”

— “The level of responsibility is not only being raised, but being legally linked to that of the political party to whom the star campaigner belongs. Even political party at the time of their registration with the Election Commission commit to stick to the ideals of the Constitution and we have reminded them about it,” the official told The Indian Express.



For Your Information:

- The MCC of ECI is a set of guidelines issued to regulate political parties and candidates prior to elections. The rules range from issues related to speeches, polling day, polling booths, portfolios, the content of election manifestos, processions, and general conduct, so that free and fair elections are conducted.
- The MCC comes into force from the date the election schedule is announced until the date that results are out.
- The MCC contains eight provisions dealing with general conduct, meetings, processions, polling day, polling booths, observers, the party in power, and election manifestos.

THE STORY OF INDELIBLE INK, A LASTING SYMBOL OF INDIAN ELECTIONS, AND WHO MAKES IT

With the first phase of voting for the 2024 Lok Sabha elections beginning on April 19, the classic symbol of Indian polls is visible everywhere – a left hand with only its index finger extended, marked by a purple-black indelible ink.

Mysore Paints & Varnish Ltd., a Karnataka Government Undertaking which is the sole manufacturer of the ink in India, told DD News that around 26.5 lakh phials or small bottles (with a capacity of 10 ml each) will be made for this election cycle.

Devised to prevent a person from casting more than one vote, the ink has been used in Indian elections for long. The India-manufactured has also travelled to other parts of the world to be used in other elections.

Been in use for decades, with little change

Today, once a voter has her credentials checked at the polling booth, and before she casts her vote by pressing a button on the Electronic Voting Machine (EVM), the indelible ink is applied on her finger. This has been the case for decades, although the mode of voting has changed.

The Representation of the People Act (RoPA) of 1951 mentions the ink. Section 61 states that rules may be made under the Act “for the marking with indelible ink of the thumb or any other finger of every elector who applies for a ballot paper or ballot papers for the purpose of voting at a polling station before delivery of such paper or papers to him.”

What makes the ink indelible?

Indelible ink contains silver nitrate. It is a colourless compound which becomes visible when exposed to ultraviolet light, including sunlight.

The higher silver nitrate’s concentration, say around 20 percent, the higher will be the ink’s quality, according to a report from the United Nations Development Programme. For up to 72 hours after application it can remain resistant to soap, liquids, home-cleansing, detergents, etc.



According to the government's MyGov website, "This water-based ink also contains a solvent like alcohol to allow its faster drying... The precise protocol for making this ink including its chemical composition and the quantity of each constituent is, however, not known to many people."

AFTER WARS, DEATHS, POLITICAL TURMOIL, HOW THE 1967 LOK SABHA ELECTIONS SAW THE INDIRA GANDHI ERA BEGIN

The years between the third (1962) and fourth (1967) Lok Sabha elections were traumatic for the young republic. Defeat in the month-long war with China was followed by the deaths of two Prime Ministers — Jawaharlal Nehru on May 27, 1964, and Lal Bahadur Shastri less than two years later.

In between came the second war with Pakistan, which lasted for almost a month and a half in August-September 1965, before both countries agreed to a UN call for ceasefire. On January 10, 1966, Shastri and Pakistan's Ayub Khan signed the Tashkent Declaration — but the Indian Prime Minister passed away in the Uzbek city the very next day, January 11.

The responsibility for being India's caretaker Prime Minister fell on Gulzari Lal Nanda, Nehru's Home Minister, who had already played that role once on the passing of the first Prime Minister. This time he remained in office for 13 days — until Indira Gandhi, Nehru's daughter and Shastri's Information and Broadcasting Minister, took oath as Prime Minister on January 24, 1966, beating Morarji Desai in the race for the job.

Voting for the fourth Lok Sabha took place between February 17 and 21, 1967. Indira led the Congress to victory, but her rift with Desai deepened. This was the last simultaneous election for Lok Sabha and state Assemblies. Non-Congress governments came to power for the first time in several states in 1967.

A changed political map...

Based on the census of 1961, the fourth Lok Sabha election was held for 520 seats — significantly higher than the 494 in 1962. Seventy-seven seats were reserved for SCs and 37 for STs. Votes were cast for 3,563 seats in state Assemblies (compared with 3,121 in 1962), of which 503 were reserved for SCs and 262 for STs.

India in 1967 was different in a few other ways too. The state of Nagaland had been established in 1963. In 1966, Haryana became a separate state and Chandigarh was designated as a Union Territory (UT). By 1967, many of the country's 10 UTs — Himachal Pradesh, Manipur, Tripura, Goa, Daman and Diu, and Pondicherry — had Legislative Assemblies and Councils of Ministers.

...And turmoil in politics

In his third term as Prime Minister, Nehru grappled with a grave drought situation. The country faced a foodgrains crisis and record high inflation rates. In 1963, Nehru had accepted the resignations of all Congress Ministers and Chief Ministers under the famous Kamaraj Plan, by which the party hoped to rebuild itself. The plan, however, annoyed several Congress stalwarts who had to give up positions of power.

Meanwhile, the political tussle with the socialists intensified. The Gandhian and socialist J B Kripalani had left the Praja Socialist Party (PSP) before the 1962 election. In 1963, socialist leader Ram Manohar Lohia entered Lok Sabha after winning a bypoll for the Farrukhabad seat. The



following year, Lohia formed the Samyukta Socialist Party (SSP), and formed an alliance with other Opposition parties to take on the Congress.

In April 1964, the Communist Party of India split, and the Communist Party of India (Marxist) was born. In the state of Kerala, the ruling Congress unit also split that same year, and the Kerala Congress was formed.

In 1965, the Republican Party of India, which had its roots in Dr B R Ambedkar's All India Scheduled Castes Federation, split into factions. Soon after the 1962 election, the Shiromani Akali Dal had split into two factions led by Master Tara Singh and Sant Fateh Singh.

A bigger Lok Sabha...

The term of the third Lok Sabha was to end on April 17, 1967, while the terms of state Assemblies were to end between March 11 and April 5 that year. Over the period of a week in February, almost 15.27 crore people (61.33% of the 25.03 crore registered voters) voted at 2.67 lakh polling stations across the country. The high percentage of polling was seen by many as an expression of the people's anger with the government of that time, which is a popular interpretation of high turnouts even today.

A total 2,369 candidates were in the fray for Lok Sabha, and 16,501 for state Assemblies. Counting of votes took long — results at three seats were declared on February 21, but the last result was declared only on March 10.

Of the 520 members elected to Lok Sabha, 30 were women. In the Assemblies, 98 of the 3,486 members were women. The fourth Lok Sabha sat for the first time on March 16, 1967.

Read Part 3 of this series | How Jawaharlal Nehru won a third term in the 1962 elections, despite growing challenges

...And a shock for the Congress

The results were a shock for the Congress. The party won just 283 seats in Lok Sabha, its lowest tally yet, even though the Congress' vote share remained above 40%.

With 44 seats, C Rajagopalachari's Swatantra Party emerged as the largest opposition party in Lok Sabha. In Gujarat, Orissa, and Rajasthan, the Swatantra Party was the main opposition.

The Bharatiya Jana Sangh (BJS), which had won 14 seats in 1962, rose to 35 seats. And the Dravida Munnetra Kazhagam (DMK), which fought only in Madras, won 25 seats.

Although the Congress emerged as the single largest party in 13 state Assemblies, it did not get a majority in five — Bihar, Punjab, Rajasthan, Uttar Pradesh, and West Bengal. In Madras, the home state of the nearly 88-year-old Rajaji, the Congress was unseated by C N Annadurai's DMK.

Coalition governments of the Samyukta Vidhayak Dal (SVD) were formed in Punjab, Bihar, Orissa, West Bengal, Madras, and Kerala, as well as in the Delhi Metropolitan Council. In UP, Haryana, and Madhya Pradesh, coalition governments were formed with the help of Congress defectors Chaudhary Charan Singh, Rao Birender Singh, and Govind Narain Singh respectively. Some of these coalitions had perhaps a dozen parties — in UP there were almost 20 — from the rightwing BJS to the extreme Left.



Indira, whom Lohia famously mocked as gungi gudiya (silent doll), won in Rae Bareilly, a seat earlier represented by her late husband Feroze Gandhi. Nehru's sister Vijayalakshmi Pandit won at the first Prime Minister's seat of Phulpur. Gulzari Lal Nanda won from Kaithal in Haryana.

Lohia and George Fernandes won on SSP tickets from Kannauj and Bombay South. Vijayaraje Scindia won from Guna on a Swatantra Party ticket, and Atal Bihari Vajpayee (BJS) won in Balrampur.

After 1967, a new era began in the political history of India, which was dominated by Indira Gandhi.

SURAT SYMPTOMS

A malady that enfeebles Indian democracy — the elimination of contest, at the level of ideas, and political mobilisation — got a geographical tag in Surat, where the Bharatiya Janata Party (BJP) candidate has been declared elected unopposed to the Lok Sabha. Democracy without an Opposition ceases to be one, but the ruling BJP has declared it as an objective in its slogan, a Congress-less India. Such an intent is in itself authoritarian, even if pursued through fair electoral means. What unfolded in Surat is far from fair: it was the foulest of tactics outside of any electoral play book. Signatories of Congress candidate Nilesh Kumbhani's nomination papers declared on affidavit that their signatures were forged. All political parties routinely field a dummy candidate to deal with the unlikely event of the primary candidate's death or rejection of nomination papers. In Surat, Suresh Padsala, who was fielded by the Congress as dummy, also had his nomination papers rejected after one of his proposers declared on affidavit that his signature too was forged. Eight other candidates withdrew their nominations, leaving the BJP candidate, Mukesh Dalal, as the only one standing. He was promptly declared the winner on April 22 by the Surat District Collector and also returning officer, and the BJP began celebrations. If at all the unopposed election of the BJP candidate signifies an absolute consensus among Surat's nearly 17 lakh voters, it is a silence that speaks loudly about a serious illness in India's democracy.

This elimination of contest through the misuse of state power, money, and misinformation has become a major threat to Indian democracy. Another candidate picked by the Congress in Gujarat not only left the party but also joined the BJP within a few days. Mr. Kumbhani's proposers were his brother-in-law, nephew and a business partner, and the story of their forged signatures does not sit well in a functioning democracy. Mr. Kumbhani is not protesting either. He has gone incommunicado. Early this year, an election officer himself tampered with the ballot to declare the BJP candidate the winner in the Chandigarh mayoral election — a result which was overturned by the Supreme Court of India. It is unlikely that the contest would have been close in Surat, had it happened. The BJP had won the seat with massive margins in all Lok Sabha elections since 1989. Therefore, the point about the uncontested election of Mr. Dalal is the extermination of the Opposition rather than about his own victory. Contestations of ideas and their synergies over centuries have made India hospitable for democracy. The BJP needs to evolve a political culture in which disagreements with opponents are negotiated through fair contests.



WHY WAS THE BJP CANDIDATE DECLARED WINNER IN SURAT?

The story so far:

The BJP's candidate from the Surat Lok Sabha constituency in Gujarat has been declared elected unopposed. This follows the rejection of the nomination paper of the candidate set up by the Congress party and the withdrawal of nominations by other candidates.

What is the law for nomination?

Section 33 of the Representation of the People Act, 1951 (RP Act) contains the requirements for a valid nomination. As per the RP Act, an elector above 25 years of age can contest Lok Sabha election from any constituency in India. The proposer(s) of the candidate should however be elector(s) from that respective constituency where the nomination is being filed. In case of a recognised party (national or State), the candidate needs to have one proposer. Candidates set up by unrecognised parties and independents need to be subscribed by ten proposers. A candidate can file up to four nomination papers with different set of proposers. This is to enable the acceptance of nomination of a candidate even if one set of nomination paper is in order.

Section 36 of the RP Act sets out the law with respect to the scrutiny of nomination papers by the Returning Officer (RO). It provides that the RO shall not reject any nomination for a defect that is not of a substantial character. However, it specifies that signature of the candidate or proposer found not genuine is grounds for rejection.

What is the current issue?

In the present case, the candidate of the Congress party for the Surat constituency, Nilesh Kumbhani had filed three sets of nomination papers. The proposers for these three nomination papers were his brother-in-law, nephew and business partner. A BJP worker objected to Mr. Kumbhani's nomination alleging that the signatures of his proposers were not genuine. The RO also received affidavits from the proposers claiming that they had not signed the nomination papers of the candidate. He sought reply/clarification from the candidate within a day on the objections raised. As the proposers could not be produced before the RO within the stipulated time for scrutiny, all three sets of nomination papers were rejected.

The election rules allow for a substitute candidate to be fielded by a political party. The nomination of this substitute candidate would be accepted if the nomination of the original candidate is rejected. In this case, the Congress party had fielded Suresh Padsala as its substitute candidate. However, the nomination paper of the substitute candidate was also rejected for the same reason, that is of the proposer's signature not being genuine. The other nominations were either rejected or withdrawn paving the way for BJP candidate Mukesh Dalal to be declared winner.

What is the legal recourse?

There have been at least 35 candidates who have been elected unopposed to the Lok Sabha. Majority of them were in the first two decades after independence with the last being in 2012.

In the instant case, however, the Congress party has alleged that the proposers were coerced to backtrack on their signatures. It has approached the Election Commission (EC) seeking to set aside the decision of the RO and restart the election process.



However, it is unlikely that the EC would act on this request as Article 329(b) of the Constitution read with RP Act provides that no election shall be called into question except by an election petition before the concerned High Court. One of the grounds on which such an election petition can be filed is improper rejection of nomination papers. Hence, the legal recourse available is to file an election petition in the Gujarat High Court.

The RP Act provides that High Courts shall endeavour to conclude such trials within six months, which has mostly not been followed in the past. Speedy disposal of election petitions would be a step in the right direction.

WHAT ARE RULES AROUND STAR CAMPAIGNERS?

The story so far:

Sunita Kejriwal, wife of Delhi Chief Minister Arvind Kejriwal, was appointed as a 'star campaigner' by the Aam Aadmi Party (AAP) for its campaign in Gujarat.

What are the legal provisions?

Section 77 of the Representation of the People Act, 1951 (RP Act) provides for law relating to expenditure incurred by 'leaders of a political party'. These 'leaders of a political party' are popularly known as 'star campaigners'. These star campaigners are usually the top leaders of a political party but can include other celebrities as well. The only requirement is that these persons have to be members of the political party that appoints them. The RP Act provides that a recognised political party (national or State) can appoint a maximum of 40 star campaigners while a registered unrecognised political party can appoint up to 20. These names are to be communicated to the Election Commission (EC) and Chief Electoral Officer (CEO) of the States as applicable within seven days from the date of notification of such election. In case of a multi-phase election, a political party can submit separate list of star campaigners for different phases. However, it is noticed that all major parties provide a single list for a State that is applicable for all phases.

What are the benefits?

The RP Act provides that expenditure incurred by the 'leaders of a political party' on account of travel by air or any other means of transport for campaigning for their political party shall not be deemed to be part of the election expenditure of a candidate of such party. The election expenditure limit for candidates is ₹95 lakh per Lok Sabha constituency in larger States and ₹75 lakh in smaller States. Hence, these star campaigners would be vote-fetchers for candidates set up by respective parties without affecting their expenditure limit. However, this is applicable only if the star campaigners limit themselves to general campaigning for the party. If in any rally/meeting organised, the star campaigner seeks votes in the name of contesting candidate(s) or shares the dais with them, then the rally/meeting expense shall be apportioned to the election expenditure of such candidate(s). If the star campaigner incurs boarding/lodging expenses while campaigning for any candidate(s), it shall be included in the expenditure account of such candidate(s) irrespective of whether it is paid for by the candidate(s). Further, if any candidate(s) travel with the star campaigner, then 50% of the travel expenditure of the star campaigner shall also be apportioned to such candidate(s).



What are the issues?

The EC has issued an advisory to all political parties to maintain decorum and restraint in campaigning and raise the level of election to 'issue' based debate. It also put star campaigners on notice in case of any violations. The star campaigners of all parties have been guilty of using inappropriate and abusive words against leaders of other political parties — appealing to caste/communal feelings of electors and making unsubstantiated allegations. In January 2020, during a campaign for the Delhi Assembly election, the EC had ordered removal of Anurag Thakur and Parvesh Verma of BJP from the list of star campaigners for making inflammatory utterances that violated the Model Code of Conduct. In another instance in November 2020, during the campaign for bye-elections to the Madhya Pradesh Assembly, the Supreme Court stayed the order of the EC revoking the star campaigner status of Kamal Nath of the Congress party for making a derogatory statement against a woman candidate of the BJP. The court observed that the EC does not have any such powers. Another issue is with respect to the assessment of expenditure incurred for the rally/meeting of such star campaigners which is always significantly lower than the actual expenditure. This may be due to the rate card used by the EC that does not reflect current market rates for various items. This results in lower apportionment of expenditure to contesting candidates.

What needs to be done?

At present, the RP Act stipulates that political parties can appoint or revoke the appointment of star campaigners. As per Article 324 of the Constitution, the EC is the highest authority that has been vested with the powers of superintendence and control of elections. Hence, the law may be amended to authorise the EC to revoke the 'star campaigner' status of a leader, in case of any serious violation of Model Code of Conduct, thereby depriving the party candidates of expenditure relief for their campaigns. This would hopefully instil a sense of responsibility among them and ensure that campaigns maintain the necessary decorum and restraint. Also, the assessment and apportionment of rally/meeting expenses where star campaigners' campaign for particular candidate(s) should be made more robust.

RECOURSE TO HATE

One of the main features of Narendra Modi's politics is his reliance on an unapologetic brand of right-wing rhetoric that is moored in demagoguery, hate speeches against minorities and the use of dog whistles — political messaging intended to please the bigoted sections of his support base. On Sunday, all these three aspects were on full display when Mr. Modi claimed that the Congress party would distribute the wealth of Indians among Muslims and that they were people with "large number[s] of children" and "infiltrators". He also said that his predecessor, Manmohan Singh, had stated that "Muslims had first claim on the country's resources". None of these statements is close to being accurate. In its manifesto, the Congress has promised a socio-economic caste census to strengthen affirmative action, besides establishing an authority to monitor the distribution of surplus land among the poor and economically weaker sections. There are independent surveys to indicate how wealth inequality has increased dramatically under the 10 years of BJP rule. The government's policies of tax breaks to corporates by slashing taxes, more dependence on indirect taxes, and individual taxes forming a greater component of the tax bucket (53.3%) versus corporate tax (46.5%), have evidently resulted in a greater skew in wealth ownership.

Dr. Singh, in 2006, had said that his government needed to prioritise plans that would uplift sections from the SCs, STs, OBCs, women and minority sections, especially Muslims. And that in a



society such as India's, the marginalised had the first claim to resources. Since then, this statement has been twisted by the Hindutva right wing and Mr. Modi has, yet again, taken recourse to doing so. There is enough evidence that fertility rates among Muslims are close to that of Hindus and the Census — inexplicably delayed by the Union Home Ministry — could show a drastic reduction in fertility rates across all sections as past Censuses and other credible surveys such as the NFHS have shown. The term, “infiltrator”, is a crass term often used as a dog whistle. The facts are easily available and well-known but that has not deterred the rabble-rousers from whipping up a frenzy. Sadly, India's public sphere has been contaminated with disinformation for over a decade. The use of social media messaging and television channels to amplify such rhetoric has made rabble-rousing immune to the consequences of being proven false. Besides, parties such as the BJP have been uncomfortable with aspects of social justice and egalitarianism that include redistribution and that explains its use of a demonisation of “others” as a way to distract from questions related to equity and casteism and social churning.

A FACT-CHECK ON MODI'S CONTROVERSIAL SPEECH IN RAJASTHAN

On Sunday, Prime Minister Narendra Modi made a series of controversial statements at a public meeting in Rajasthan. He referred to Muslims in India as “those who have a large number of children” and claimed that former Prime Minister Manmohan Singh said (in 2006) “Muslims had the first claim on the country's resources”. He alleged that the 2024 Congress manifesto proposes to distribute people's wealth among Muslims if the party is elected to power. He made this claim by combining sections in the manifesto, which addresses wealth inequality, and connecting those points to the former Prime Minister's speech in 2006.

A fact-check using government data shows that the claim that Muslims give birth to more children is erroneous.

The fertility rate is the average number of children a woman is expected to have in her lifetime. A rate of 2.1 (the ‘replacement level’) means that the population is stable. The fertility rate of Muslims along with the fertility rates of all other religious groups have been drastically declining over the years. As per 2019-21 data, the fertility rate of Muslims was 2.36, much closer to the replacement level. Also, the gap between the fertility levels of Hindu and Muslim women has sharply reduced from 0.81 to 0.42 in the two decades. This trend holds true even among the most populous States.

Across sexes, the share of Muslims who did not go to school was much higher than other religious groups in 2005-06. While a higher share of Muslims continued not to go to school even in 2019-21, the gap narrowed. Similarly, the share of Muslims who completed 12 years of schooling was the lowest among all the religious groups in 2005-06 and continued to be so in 2019-21.

The neonatal mortality rate (NMR) and under-five mortality rate (U5MR) among Hindus and Muslims across two periods. NMR refers to the number of deaths during the first month of life per 1,000 live births. The lower the figure, the better. The decrease in NMR among Hindus has been much greater than among Muslims. In 1998-99, the NMR among urban Hindus was 36.6, which was much higher than the 25.9 among urban Muslims. The gap narrowed in 2005-06 to 30.9 among urban Hindus and 21.6 among urban Muslims. In 2019-21, the NMR of urban Hindus further reduced to 18.4, which was lower than the 18.7 recorded among urban Muslims. A higher drop in NMR among the Hindu population when compared with the Muslim population was also seen in rural areas. An analysis of U5MR also shows a similar trend.



RESERVATION FOR MUSLIMS: ANDHRA PRADESH CASE AND ISSUES BEFORE THE COURT

At an election rally in Tonk in Rajasthan on Tuesday (April 23), Prime Minister Narendra Modi said the Congress has often tried to give reservation to Muslims by reducing the quota for SCs, STs and OBCs. The PM specifically cited attempts at providing a 5% quota for Muslims in Andhra Pradesh as a “pilot project, which Congress wanted to try in the entire country”.

Reservation for Muslims

Several Muslim communities are included in the Other Backward Classes (OBC) reservation both at the central and state levels. The criteria for the OBC quota is social and educational backwardness. Article 16(4) of the Constitution provides for reservation for a “backward class of citizens, which in the opinion of the State, is not adequately represented in the services under the State”.

The OBC quota works differently in different states.

In Karnataka, for example, Muslims had a 4% sub-quota within the 32% OBC quota, which the Basavaraj Bommai government in 2023 redistributed among Vokkaligas and Lingayats. Kerala has an 8% Muslim quota in its 30% OBC quota. Several other states, including Tamil Nadu and Bihar, have Muslim caste groups in their OBC quota.

Andhra Pradesh quota

In Andhra Pradesh, as per the 2011 census, Muslims constitute about 9.5% of the population. Muslim groups such as Dudekula, Laddaf, Pinjari/ Noorbash, and Mehtar are included in the state OBC lists, which have quotas ranging from 7% to 10%. However, there had been a push in the undivided state to follow the Karnataka and Kerala model to include all Muslims in the OBC category.

FIRST ATTEMPT: In June 2004, just a month after the Congress came to power in the state, a Government Order (GO) was issued to the Commissionerate of Minorities Welfare (whose ex officio head was the state’s principal secretary) to look into “socio-economic and educational conditions of Muslim community in the state” to include them as OBCs.

In July 2004, the Commissionerate wrote to the government recommending 5% reservation to “Muslim Minorities in employment, educational and other fields on par with the Backward Classes in the State”. The recommendation was implemented a week later.

On September 21, 2004, a five-judge Bench of the Andhra Pradesh High Court struck down the quota as unsustainable. The court’s ruling was primarily on two grounds.

First, that the quota was brought without being referred to the Backward Classes Commission which was mandated by the state’s 1993 Backward Classes Act. And second, that the quota did not exclude the “creamy layer”, and allowed reservation to Muslims as a whole.

The HC also issued a direction to the state government “to reconstitute the Commission for Backward Classes, and on such reconstitution of the Commission for Backward Classes, the Government shall initiate the process of consultation and forward the necessary material, including the G.O. Ms. No.33, to the Commission for Backward Classes”.



However, one of the key questions before the court was whether “the Muslims as a group are entitled to affirmative action/social reservations within the constitutional dispensation?”

On this aspect, the HC ruled affirmatively. “Reservations for Muslims or sections/ groups among them, in no manner militate against secularism, which is a part of the basic structure of the Constitution. The concept of secularism is based on a benign neutrality to benefit all including religious groups and it seeks to advance “good” for all including religious groups,” the court said.

SECOND ATTEMPT: In June 2005, the state government brought another Ordinance, which again gave a 5% quota to Muslims.

In October, when the Ordinance was under challenge before the HC, the government replaced it with legislation. This time, the Backward Classes Commission had recommended that “the entire Muslim Community is socially, educationally and economically backward and therefore steps shall be taken for providing reservation to the members of the Muslim Community for improving their social, educational and economic conditions.”

The law stated that while the total reservation of the state (SC/ ST and OBC) at that time added up to 46%, an additional 5% to Muslims was justifiable even though it crossed the Indra Sawhney threshold of 50%.

“The Backward Classes population in the State comes to more than 77% of total population and therefore, a further reservation of 5% in favour of Muslim Community in addition to existing 46% of social reservation is considered to be just and reasonable,” the law said.

However, the HC once again struck down the quota on the ground that the committee did not rely on objective criteria to conclude that Muslims as a group were backward in AP.

“The failure of the Commission to recognize the established heterogeneity of the Muslims, its failure to proceed on data collection, statistical, social, educational and economic analyses of the data so collected, restricted to Muslims excluding those classes/groups of Muslims already identified and recognized by the Government as backward classes, constitutes a fatal flaw in the conceptual foundation, adopted methodology and social survey of the Commission’s exercise and introduces an irredeemable infirmity to its conclusions and recommendations,” the court said.

The ruling of the HC was challenged before the SC. In 2010, in an interim order, the SC directed that status quo be maintained till the court had heard the issue.

Before the High Court’s ruling of 2005, some college admissions were made allowing the 5% quota. The top court’s interim order ensured no prejudice to these admissions.

The final hearing in the SC case was scheduled in 2022. However, since one of the issues involved was on the Indra Sawhney 50% limit on quotas, the SC had said that it would hear the case after the Economically Weaker Section (EWS) quota issue was decided.

The EWS quota, which is also in excess of the 50% ceiling, was cleared by the SC in November 2022. However, the AP quota issue is yet to be heard.



WHAT IS ART 244(A), THE CONSTITUTIONAL PROMISE OF AUTONOMY DRIVING THE ELECTION NARRATIVE AT A TRIBAL SEAT IN ASSAM?

In Assam's tribal-majority Diphu Lok Sabha constituency, which votes on April 26, candidates of all parties have promised the implementation of Article 244(A) of the Constitution to create an autonomous 'state within a state'.

This, in fact, has been the primary election promise in Diphu for decades. What is Article 244(A) of the Constitution, and why is it important in this constituency?

Where is Diphu, and what is the social profile of this Lok Sabha constituency?

Diphu is the most sparsely populated of Assam's 14 Lok Sabha constituencies, with just 8.9 lakh voters. It is reserved for Scheduled Tribes (STs), and covers six legislative Assembly segments in three tribal-majority hill districts of Assam: Karbi Anglong, West Karbi Anglong, and Dima Hasao.

These three districts are administered under the provisions of the Sixth Schedule of the Constitution, which describes the "Provisions as to the Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram".

These areas come under two autonomous councils: the Karbi Anglong Autonomous Council (KAAC) and the North Cachar Hills Autonomous Council. Voters at the seat belong to various communities: Karbi, the third largest tribe in the state, Dimasa, Hmar, Kuki, Rengma Naga, Zeme Naga, Bodo, Garo, Assamese, Bengali, Bihari, Gorkha, etc.

However, the seat has been represented by members of the Karbi community since 1977. Currently, all Assembly segments under the Diphu seat are with the BJP.

What is Article 244(A) of the Constitution?

Article 244(A) was inserted by The Constitution (Twenty-second Amendment) Act, 1969, which enabled Parliament to pass an Act to "form within the State of Assam an autonomous State comprising (whether wholly or in part) all or any of... [certain specified] tribal areas", including Karbi Anglong.

This autonomous state would have its own Legislature or Council of Ministers or both. This provision goes a step further than the provisions under the Sixth Schedule, which are already in place in these areas.

The autonomous councils under the Sixth Schedule have elected representatives for more decentralised governance of these tribal areas, but they have limited legislative powers, do not have control over law and order, and have only limited financial powers.

When did the demand for autonomy start, and how has it played out so far?

The demand for autonomy is as old as the movement in the hill areas of undivided Assam, which began in the 1950s, seeking a separate hill state. This movement resulted in the creation of the full-fledged state of Meghalaya in 1972 — however, because of the promise extended through Article 244(A), the leaders of the Karbi Anglong region opted to remain with Assam.

The Autonomous State Demand Committee (ASDC) — which was set up as a mass organisation to press for the region's autonomy, and which continues to operate today — along with student



bodies in the region, signed a Memorandum of Settlement with the state and central governments in 1995 for enhancing the powers of the two autonomous councils in the region by increasing the number of departments under their charge to 30 from 10.

However, over the years, as autonomy for the region remained elusive, the demand for implementation of Article 244(A) also took the form of an armed insurgency. The BJP-led governments in Delhi and Guwahati have signed several peace accords with militant groups, including with the Karbi and Dimasa.

In 2021, a peace settlement was reached with five militant groups in Karbi Anglong — Karbi People's Liberation Tigers, People's Democratic Council of Karbi Longri, Karbi Longri NC Hills Liberation Front, Kuki Liberation Front, and United People's Liberation Army — under which greater autonomy and a special development package of Rs 1,000 crore over five years were promised.

Last year, an agreement was signed with the Dimasa National Liberation Army along the same lines.

HOT BUTTON

The Election Commission of India (ECI) suspects ambient heat dissuaded voters from turning out in greater numbers during the first phase of the general election, on April 19. It has since constituted a task force with representatives from itself, the India Meteorological Department (IMD), the Ministry of Health and Family Welfare, and the National Disaster Management Authority to assess local heat and humidity for five days before each phase of polling and work with State electoral apparatuses to ensure adequate facilities at booths. The IMD declares heat wave conditions in a region depending on whether one of a few conditions is met, centred on deviations of the daytime temperature from the decade-long average. But these declarations are not concerned with the people's experience of ambient heat. Even without a heat wave, people of all ages are at significant risk if the relative humidity increases the wet-bulb temperature beyond 30° C and they spend more than a few minutes outdoors. Heat can also accumulate and persist in some locations more than others. For example, semi-planned or unplanned areas can exacerbate the risk of heat stress through poor ventilation, crowding, not installing shaded resting spots, and overlooking heat radiated by asphalt surfaces.

Getting more people to vote is like getting more children to school, which the midday meal scheme contributed significantly to. The ECI would do well to implement similar measures to incentivise voting by minimising heat exposure. The physiological adversity a voter may suffer when commuting between home and polling booth can be controlled to a limited extent by tweaking the polling dates and hours. (In the same vein, rescheduling the elections to non-summer months may spare voters the heat but not the wrath of some other elements.) The task force must ensure every booth has shaded waiting areas with seating; air flow; oral rehydration options; sanitary facilities; fruits; updated first-aid kits; wheelchairs; accessible architecture; and medical services every dozen booths or so. Some additional needs go beyond the task force. For example, the ECI's pledge to increase voters' awareness of heat management protocols and provisions at booths should not encroach on the duties or resources of the Accredited Social Health Activists, and must instead bank on a separate cadre. The Health Ministry must also collect and share data about heat-related morbidity and mortality as well as reconcile its numbers with those of the National Crime Records Bureau, so that officials can identify problems and institute reliable long-term countermeasures.



STUDY SAYS SOLAR RADIATION AVAILABLE FOR PRODUCING POWER FALLING IN INDIA

The quantity of solar radiation available that can be economically converted by solar panels to electricity is showing an “alarming decreasing trend” in several locations in India, says an analysis by scientists at the India Meteorological Department (IMD) and published this month in the organisation’s in-house scientific journal *Mausam*.

While increased aerosol load — fine particles from carbon emissions, fossil fuel burning and dust — and clouding are said to be causative factors, installing more efficient solar panels could help counter this, the scientists say in their paper.

Aerosols absorb the sunlight and deflect it away from the ground and they can also precipitate the formation of dense clouds that again block sunlight. The efficiency of solar panels are significantly influenced by the amount of sunlight falling on them.

For the study, the scientists looked at radiation trends at 45 in-house stations, which have instruments to measure solar radiation but used data from only 13 to compute the changes in solar photovoltaic (SPV) potential as they were the only ones with a continuous record from 1985 to 2019. SPV is the amount of radiation that may be practically available to be converted to electricity by panels.

SPV potential showed a general decline in all stations which included Ahmedabad, Chennai, Goa, Jodhpur, Kolkata, Mumbai, Nagpur, New Delhi, Pune, Shillong, Thiruvananthapuram, and Vishakhapatnam.

India’s largest solar parks are located in the north-west of the country, particularly Gujarat and Rajasthan, and cities in both these States are also showing a decrease in SPV potential. As of today, India’s installed solar power capacity is about 81 GW (1 GW is 1,000 megawatt), or roughly 17% of the total installed electricity.

India has ambitious plans of sourcing about 500 GW, nearly half its requirement of electricity, from non-fossil fuel sources by 2030. This would mean at least 280 GW from solar power by that year or at least 40 GW of solar capacity being annually added until 2030. In the last five years, this has barely crossed 13 GW though the government has claimed that COVID-19 affected this trajectory and the country was on track to add between 25-40 GW annually in the coming years.

Prime Minister Narendra Modi had earlier this year also announced a major initiative to fund rooftop solar installation in at least one crore houses across the country.

While the role of aerosols in blocking sunlight available on earth has been apparent since the 1980s, several studies have shown that there are variations both over time and location.

Global solar radiation showed a generally decreasing trend from 1981-2006. 1971-2000 showed greater dimming compared to 1981-2006. However, on the whole, there was a reversal in trends after 2001 with the exact causes unclear.



ON THE NATIONAL CLEAN AIR PROGRAMME

The story so far:

When the Indian government launched the National Clean Air Programme (NCAP) in 2019, it was to cut the concentration of atmospheric Particulate Matter (PM) by 20-30% by 2024, from 2017 levels. This was later revised to 40% by 2026.

What is the NCAP?

Under NCAP, cities continuously violating annual PM levels in India need to prepare and implement annual Clean Air Action Plans (CAAPs). To facilitate this, the Ministry of Environment, Forest, and Climate Change has allocated ₹10,422.73 crore. Most cities proactively submitted their CAAPs yet their implementation has been inconsistent. On average, only 60% of the allocated funds have been used thus far, according to the Ministry, with 27% of cities spending less than 30% of their designated budgets. Visakhapatnam and Bengaluru have spent 0% and 1% of their NCAP funds, respectively. Implementation delays hinder NCAP's success, particularly delays in approvals from the competent authorities (for example, the technical specification of tendering processes or for procuring products such as mechanical sweepers and electric buses).

There is also a lack of standard operating procedures for the implementation process. Time-consuming tasks required to implement control measures and the absence of well-defined timelines create further delays. Yet other reasons include bureaucratic red-tape and lingering doubts regarding the effectiveness of proposed mitigation measures. After the recent findings over the inefficacy of outdoor smog towers, decision-makers' hesitation is justified. But overcoming this also requires a systemic approach based on Emissions Inventory (EI), Air Quality (AQ) modelling, and Source Apportionment (SA).

How can scientific tools help?

EI and SA studies are critical to identify and understand the origins of pollution. EIs provide insights into local pollution sources and their contributions, allowing experts to forecast future emissions based on demographic shifts and technological advancements across sectors, among other factors. EIs also help shape targeted pollution control strategies. They have their limitations, too, particularly in assessing the impact of transboundary pollution sources — such as when determining the effect of stubble-burning outside Delhi on the city's air quality.

SA studies offer a detailed analysis of contributions from various pollution sources, including those located afar. However, they aren't suited for predictive analysis and require substantial resources, including specialised personnel and equipment for chemical analysis. SA studies also can't distinguish between the origins of pollution, like, say, emissions from diesel trucks 200 m away and 20 km away, because diesel emissions have similar chemical signatures.

These gaps can be bridged through AQ modelling, which informs our understanding of pollution dispersion, including from distant sources.

How are these being used?

Ideally, the cities should look into EI and SA data to pinpoint air pollutants and prepare mitigation measures targeting each polluting activity. According to the Portal for Regulation of Air-pollution in Non-Attainment cities, only 37% of cities have completed EI and SA studies, meaning the



remaining 63% don't have a clear idea about what is polluting their air. Thus, the effectiveness of CAAPs is questioned if the cities don't know the individual emissions reduction potentials of their proposed mitigation measures. Based on the potential and infrastructure requirements, cities need to set proper yearly targets and fund them.

Moreover, the NCAP's reliance on concentration data — a measure of population exposure to harmful pollution — further complicates the situation. Pollution from high-emitting industries and other sources outside city limits, carried into urban areas by winds complicates urban air-quality management. Many existing control measures focus only on primary PM emissions, neglecting their secondary precursors. A shift towards comprehensive strategies addressing both primary and secondary pollutants is thus important. Further, although one of the NCAP goals is to set up infrastructure to forecast AQ, no city barring Delhi, Pune, Mumbai, and Ahmedabad has a decision-support system.

What does NCAP need to succeed?

Beyond the need for data and models, swift implementation on the ground is essential. For this, implementation agencies should seek to reduce bureaucratic red tape by utilising shared, standardised technical evaluations. As NCAP funding is linked with the performance of cities (based on the annual average PM concentration reduction), prior budgeting and time management play crucial roles. Technical feasibility, budgeting, and time estimates need to be part of the initial plans.

The journey towards cleaner air in India, as charted by NCAP, will be difficult but is necessary. NCAP's success hinges on a multifaceted approach that combines rigorous scientific studies, strategic funds, and swift and effective implementation of mitigation measures.

AN OVERVIEW OF THE PMAY-U SCHEME

The story so far:

As the current Union government completes two terms, one of its flagship programmes was Housing For All (HfA) by 2022, both in urban and rural areas, planned under the PMAY (Pradhan Mantri Awas Yojana) scheme in 2015.

What is the PMAY scheme?

While the PMAY is a centrally sponsored scheme both the Union and the State governments are supposed to financially contribute to it. The declared objectives of the scheme included rehabilitation of slum dwellers with private developers' participation; promotion of affordable housing for the weaker sections through Credit Linked Subsidy Schemes (CLSS); affordable housing in partnership with public and private sectors; and subsidy for Beneficiary-led Construction (BLC).

How has the scheme panned out?

Even though two more years have passed since the supposed completion of the scheme, HfA remains a distant reality. In August 2022, the government approved the continuation of the PMAY-Urban (PMAY-U) up to December 31, 2024, for the completion of already sanctioned houses till March 31, 2022.



Currently, according to the government's estimates, there is a shortage of around 20 million houses in rural areas and three million in urban centres. However, these figures do not speak of the actual reality. Till 2023, the urban shortfall was more than 60 lakh houses. According to a study by the ICRIER, urban housing shortage increased by 54%, from 1.88 crore in 2012 to 2.9 crore in 2018. Thus, the PMAY-U has actually faltered. Even according to data from the PMAY dashboard (as of April 15), there is a shortfall of around 40 lakh houses from the sanctioned and completed segments. This means that the vertical that is supposed to meet the largest demand, called in-situ slum redevelopment (ISSR), has failed. According to a PIB press release, under the ISSR, which is the most pressing need in cities, only 2,10,552 houses have been sanctioned for eligible beneficiaries. According to another report by Newslandry, the PMAY-U has only addressed a 25.15% of the housing shortage by delivering 80 lakh homes. Even if the remaining houses sanctioned are constructed by the end of 2024, it would have addressed just about 37% of the real need. Almost 2.4 crore households will still be without a roof.

The current housing programme which was a kind of merger of the Rajiv Awas Yojana into the PMAY has spent over \$29 billion in the last five years providing support for both rural and urban low-cost housing. Despite this focus and budgetary infusion, "Housing for All" remains an unfulfilled promise.

What ailed the PMAY?

The scheme is euphoric in the participation of the private sector in bridging the gap of public investments in social housing. The current estimates suggest that in the Indian urban landscape around 40% (according to the World Bank, 49%) of the people are living in both designated and informal slums. Hence, the success of the PMAY was dependent on addressing the housing question in the slums.

In some of the projects where spaces occupied by the slum dwellers were handed to private players, the vertical growth of such settlements created more problems for the residents rather than addressing them. Take for example a multi-storey building with the recurring cost of water, electricity and sewerage utilities which at times went beyond the scope of residents' expenditure. Building typologies and linear design with squeezed spaces dissuaded people from occupying such houses. Land was also a major issue. Land registered under airports, railways, forests, etc., was impossible for ISSR. Moreover, plans for ISSR were drawn up by consultants, without any role from the community.

Another major hurdle is the dichotomy existing between the city's master plans and PMAY-U. Most of the cities' plans are now being dictated by big consultants who favour large capital-intensive technological solutions. Take for example, the transit-oriented development models being advocated by the Delhi Development Authority in its 2041 master plan. It does not speak about social housing and states that this must come from market forces. In such a scenario, almost all verticals of PMAY fail.

It is worth noting that the Centre's contribution to the overall investment expenditure under this scheme is just about 25%, or ₹2.03 lakh crore. The bulk of the money is shelled out by the beneficiary households themselves, that is 60% or ₹4.95 lakh crore. State governments (together with Urban Local Bodies) spend ₹1.33 lakh crore on the scheme as well. The architecture of PMAY does not address the landless and the poor. Around 62% of the houses sanctioned come under the BLC vertical where the government's role is limited to just cost sharing with the beneficiaries. CLSS beneficiaries are supposed to be 21%. In both the above, the government has a limited role



with just the provision for providing interest subsidy, whereas land is owned by the beneficiaries. Slum-dwelling families that are to be rehabilitated under ISSR make up just about 2.5% of the total beneficiaries.

SUDHIR KAKAR, 'FATHER OF INDIAN PSYCHOANALYSIS', DIES AT 85

Celebrated psychoanalyst Sudhir Kakar was also a great table tennis player. Vikram Lal, former CEO of Eicher Motors, who lived in his Delhi locality in the 1970s, recalls that he won several state-level trophies growing up in Rajasthan. They played together sometimes, but it was their proximity at a time when there weren't many young couples in the area, and his wife's interest in psychology, that sealed their lifelong friendship – one that would witness Kakar's rise as the 'father of Indian psychoanalysis', becoming one of the sole practitioners of the discipline in India. Kakar died Monday at the age of 85.

The author of more than 20 non-fiction and fiction works, he was interested in sexuality, mysticism and religion as a counterpart to modern-day globalisation. He studied Freud and applied him to everything from film criticism to psychotherapy to mythology, considering Hindi cinema a producer of "new myths" and "collective fantasies" that came to India's rescue during great sociopolitical and economic upheaval. Kakar called the phenomenon a "humble representative of the Hindu cultural ideal."

One of his oldest friends, art critic Alka Pande, recalls his translation of Kamasutra (2015) and essay of her 2014 exhibition on the same as an instance of how their conversations about the psychology of art enriched her. "He was a great enjoyer of life. He had a cigar and drink of vodka every evening, and loved going to the beach. He was always very open and generous with what he knew," she says.

The Inner World (1978) was one of Kakar's first major works, decoding how Hindu mythology affected Indians on a daily, intimate and societal level, with later works like Shamans, Mystics and Doctors (1990) and The Indians: Portrait of a People (2007) touching similar ground. "He was interested in interpreting Indian society to the West, but it was very interesting to us Indians too," said Lal.

Kakar was interested in the interaction of religion and politics, with political scientist Ajay Gudavarthy writing in a 2020 piece how Kakar observed that "rumours of poisoned milk being sold are spread during communal riots" because milk symbolises a "primordial maternal security", capable of arousing "fear, insecurities and a primordial instinct for violence." In a 2006 interview, Kakar said, "The Indian worldview is very romantic and uncynical... Life is seen as tragic, but there's an order, and if one has gone about one's life conscientiously one will arrive at the positive... Astrologers are psychotherapists for the majority of Indian society. They do the same thing: draw up a scenario, explain the connections, offer... solutions."

Kakar turned to fiction late in life, with themes overlapping with his research. He debuted with The Ascetic of Desire (1998), about the third-century author of Kamasutra, and followed it with Ecstasy (2001), about a man who wakes up one morning having grown breasts. He returned to spirituality with The Devil Take Love (2015), about the seventh-century poet Bhartrhari, and wrote The Kipling File (2018), about the English novelist Rudyard Kipling. His first wife, Apeksha, recalls how his first manuscript, The Heavy Knife, was never published but she got a peek at it when he was wooing her in the 1960s at a party in her uncle's home. "When I met him, he was quite a charmer but very shy and selective of his conversations. He read a lot and always knew



what he wanted out of his career and future. But he wasn't like men today who share their household duties with their wives... He was quite self-absorbed but gentle and soft-spoken, not aggressive..." she said.

NEW TEST FOR SPECIAL LEARNING DISABILITIES IN ADULTS ON ANVIL

The Union government is expected to roll out a new test to diagnose specific learning disabilities (SLDs) in adults in India by the end of the year, government officials have said, adding that the test is being designed by the National Institute for the Empowerment of Persons with Intellectual Disabilities (NIEPID) in Telangana's Secunderabad.

This comes even as the Supreme Court is in the middle of hearing a writ petition by a former Jawaharlal Nehru University student challenging the absence of such diagnostic methods for testing SLDs in adults, which prevented them from getting disability certificates.

Getting a certificate is imperative in order to claim benefits under the Rights of Persons with Disabilities (RPwD) Act, 2016, which provides for reservation in government or higher education institutions receiving government aid (5%), and in government jobs (4%).

Left out in 2016

But when SLDs were introduced in the list of disabilities in 2016, it invariably left out people who were adults at the time because the nature of the disorder requires diagnosis at early age.

Senior officials in the Union Social Justice Ministry said that the new test is being developed by NIEPID and should be ready for a phased rollout by the Department of Empowerment of Persons with Disabilities by the end of the year after it has been run against global standards for validation.

While the top court was hearing the matter, the Ministry issued a notification on March 12 revising the guidelines for assessing the extent of the specified disabilities.

The certification requirements for SLDs included a clinical assessment, an IQ assessment and an SLD assessment. The SLD assessment can be done using the NIMHANS battery test or the Grade Level of Assessment Devices (GLAD). This certification begins at the age of 8, followed by repeat certifications — once in Class 10, and then in Class 12.

The certificate issued after the final assessment at the age of 18 or above will be valid for lifetime.

HOW ISRO USED SATELLITE REMOTE-SENSING TO ANALYSE GLACIAL LAKES IN HIMALAYAS

Earlier this week, the Indian Space Research Organisation (ISRO) released satellite-data-based analysis on expansion of glacial lakes in the catchments of Indian Himalayan river basins. This is the latest among a clutch of studies on glacial lakes that have highlighted the risks of glacial lake outburst floods (GLOFs), and their impact on infrastructure and settlements downstream of such lakes.

What did ISRO's analysis reveal?

ISRO's analysis looked at satellite data archives spanning the past four decades to assess changes in the glaciated environment. Long-term satellite imagery covering the catchments of Indian Himalayan river basins — spread over India, Nepal, Tibet, and Bhutan — is available from 1984 onwards, till 2023. ISRO's data has indicated significant expansion in the size of glacial lakes.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



Of the 2,431 lakes larger than 10 hectares (identified during 2016-17), 676 glacial lakes had expanded significantly since 1984. Of these 676 lakes, 601 lakes had more than doubled in size, 10 lakes had grown between 1.5 to 2 times, and 65 lakes had grown 1.5 times.

ISRO said that 130 of the 676 lakes are situated in India, in the Indus (65), Ganga (7), and Brahmaputra (58) river basins. These lakes have expanded as glaciers are retreating at an ever faster rate due to global warming.

How are glacial lakes formed?

The movement of glaciers causes erosion and creates depressions in the surrounding topography. When they retreat, meltwater starts to accumulate in such depressions, giving birth to glacier lakes.

ISRO categorised glacial lakes into four broad categories based on how they were formed — moraine-dammed, ice-dammed, erosion-based, and 'others'. Moraine and ice-dammed lakes are formed when water is dammed by moraine — debris such as rocks and soil left during the movement of glaciers — and ice respectively. Erosion-based lakes are formed when water is dammed by erosion-created depressions.

While glacial lakes are crucial sources of freshwater for rivers, they also pose significant risks, specifically of GLOFs, which can have devastating consequences on communities downstream.

"GLOFs occur when glacial lakes release large volumes of meltwater due to the failure of natural dams... resulting in sudden and severe flooding downstream. These dam failures can be triggered by various factors, including avalanches of ice or rock," ISRO said.

How is satellite remote-sensing technology used to monitor glacial lakes?

The monitoring of glacial lakes and their expansion in the Himalayan region is challenging due to the rugged terrain. This is where, according to ISRO, satellite remote-sensing technology "proves to be an excellent tool for... monitoring due its wide coverage and revisit capability".

"Satellite-derived long-term change analysis provide valuable insights for understanding glacial lake dynamics, which are essential for assessing environmental impacts and developing strategies for GLOM risk management and climate change adaptation in glacial environments," ISRO said.

Glaciologist Ashim Sattar, Assistant Professor, Indian Institute of Technology, Bhubaneswar, said: "Most of the glacial lake sites are not accessible by motorable roads. In this scenario, remote sensing tools, which are highly advanced now, can help us monitor the growth of glacial lakes and understand their dynamics".

He also said fieldwork can be carried out at lake sites which have been identified as potentially critical. "Fieldwork is crucial to set up instrumentation for early warning systems. These can include installing motion detection cameras, water level sensors, discharge meters etc. that can capture anomalous activity in and around glacial lakes," Sattar said.

How can the risks posed by glacial lakes be mitigated?

In 2023, a study published in the Journal of Geophysical Research examined the risks posed by Ghepan Gath lake — located at an elevation of 4,068 m in Himachal Pradesh — to Sissu in Lahaul valley, and modelled the impacts of lowering the water levels in the lake.



It found that lowering of the lake levels by 10 to 30 m significantly reduces the impacts on Sissu town, though not completely eliminating the risks posed by a GLOM event.

One way to syphon off lake water is by using long High Density Polyethylene (HDPE) pipes. In 2016, members of the Sikkim State Disaster Management Authority and Sikkim's Department of Science and Technology and Climate Change, among others, used this method to reduce water levels in Sikkim's South Lhonak Lake.

INDIA 4TH LARGEST MILITARY SPENDER IN 2023: SIPRI

With military expenditure worth \$83.6 billion in 2023, India was the fourth largest spender globally in 2023, the latest report by Stockholm International Peace Research Institute (SIPRI) states. This was a result of growing personnel and operations costs that comprised about 80 per cent of the total military budget, the report said.

— The latest data showed that the United States, China and Russia remained the top three military spenders globally followed by India and Saudi Arabia.

— According to the report, Indian spending was up by 4.2 per cent from 2022 and by 44 per cent from 2014.

— The capital outlays to fund military procurement remained relatively stable at around 22 per cent of the budget in 2023, of which 75 per cent went towards equipment produced domestically.

— As per the report the five biggest spenders in 2023 –the United States, China, Russia, India and Saudi Arabia—together accounted for 61 per cent of world military spending. The US spending was \$916 billion and the Chinese spending was an estimated \$296 billion. Russia's military spending grew by 24 per cent in 2023 to an estimated \$109 billion.

— As per the report, Ukraine became the eighth largest military spender in 2023, increasing its spending by 51%.

NEW SHOE SIZING SYSTEM PROPOSED FOR INDIANS: WHAT IS 'BHA' AND THE NEED FOR IT?

A pan-India survey on the feet sizes of Indians was recently carried out as part of a larger project for developing an Indian sizing system for footwear. Proposed to be named 'Bha' (भ) to represent Bharat, it could form the basis for manufacturing footwear in India. Upon its implementation, Bha will replace the existing UK/European and the US sizing systems.

What did the survey find?

Initially, the hypothesis was that at least five footwear sizing systems would be required for Indians to be inclusive of various ethnicities. Prior to the survey, it was thought that people from northeast India, on average, had smaller feet sizes compared to the rest of India.

A survey was conducted between December 2021 and March 2022, covering 1,01,880 people across 79 locations in five geographical zones. 3D foot scanning machines were deployed for understanding the size, dimensions and structure of an average Indian foot.



It found that the growth of the foot size of an average Indian woman peaked at the age of 11 years whereas that of an Indian man peaked at about 15 or 16 years.

Overall, Indians' feet were found to be wider than that of Europeans or Americans. Due to the narrow footwear available under the UK/European/US sizing systems, Indians have been wearing footwear which are a size bigger than required.

Many Indians were found to be wearing extra-long, ill-fitted and tight footwear. In the case of high-heeled women's footwear, wearing a bigger size was both inconvenient and a cause for potential injuries.

For men, shoelaces were tightened much more than ideal to ensure the shoes were not loose fitting. This affected the normal flow of blood for the wearer.

By wearing footwear not designed according to their feet's specifications, Indians have been vulnerable to injuries, shoe bites and compromised foot health – especially among elderly women and diabetics.

A statistical analysis of the massive data obtained from the survey concluded that a single shoe sizing system could be devised.

Why was the need for an Indian shoe sizing system felt?

The British introduced UK sizes in India before Indian independence. According to it, an average Indian woman wears footwear sizes between 4 and 6, and the average man between 5 and 11.

Since there existed no data on the feet structure, size, dimensions of Indians, developing an Indian system had been difficult and was never undertaken.

With an Indian user now owning an average of 1.5 footwears each and India being the world's most populated country, it is one of the world's biggest markets and manufacturers of shoes. Industry stakeholders also said that an estimated 50 per cent of the footwear ordered online were rejected by customers. With Bha, both the users and the footwear manufacturers could benefit.

What are the survey's recommendations?

Bha proposes eight footwear sizes: I – infants (0 to 1 year), II – babies (1 to 3 years), III – small children (4 to 6 years), IV – children (7 to 11 years), V – girls (12 to 13 years), VI – boys (12 to 14 years), VII – Women (14 years and above) and VIII – Men (15 years and above).

For commercial purposes, initially manufacturing of footwears ranging in sizes III – VIII would be sufficient. Footwear manufactured as per Bha could give nearly 85 per cent of the country's population the right fitting and better comfort.

The biggest advantage of adopting Bha would be that footwear manufacturers would need to develop only eight sizes as against the present 10 sizes (English system) and seven sizes (European system). In addition, half-sizes would not be needed.

The shoe last size will have an additional 5mm foot length. The Bha system will also be wider at its girth than the footwear currently available commercially.



What is the current status of Bha?

The Chennai-based Council of Scientific and Industrial Research–Central Leather Research Institute (CSIR–CLRI) conducted the survey. It submitted its recommendations to the Department of Promotion of Industry and Internal Trade (DPIIT), which comes under the Union Ministry of Commerce. The DPIIT has forwarded them to the Bureau of Indian Standards (BIS), which is the Indian authority to implement this sizing system, for approval.

Since Bha will completely overhaul the existing sizing systems, the departments have suggested that footwear manufactured as per Bha size standards should be given to users for trial, testing and feedback. Bha is expected to be implemented sometime in 2025.

WHY HIGH COURT UPHELD KARNATAKA'S BAN ON HOOKAH

The Karnataka High Court on Monday (April 22) upheld the state government's ban on hookahs as being in the interest of the general public, and ruled that hookah bars were an illegal "service" under India's anti-tobacco law.

On March 11, a single judge Bench of Justice M Nagaprasanna had reserved its judgment on the challenges by several restaurant owners to the government's February 7 notification.

Article 47 and Article 19(1)(g) of the Constitution

The government argued that Article 47 of the Constitution places a duty on the State to "raise the level of nutrition and the standard of living and to improve public health", which includes the "prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health".

Article 47, along with the rest of the provisions in Part IV of the Constitution, is a "directive principle of state policy". According to the Constitution, directive principles are not "enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the State to apply these principles in making laws".

The HC held that Article 47 was intrinsically linked with the right to life with dignity under Article 21.

"The paramount duty is cast upon the States and its authorities to achieve appropriate level of protection to human life and health which is a fundamental right guaranteed to the citizens under Article 21," it said.

The petitioners argued that the government's notification violates the fundamental right to "practise any profession, or to carry on any occupation, trade or business" guaranteed by Article 19(1)(g).

However, the court held that this freedom can be subject to certain reasonable restrictions including the prohibition of certain occupations, trades and businesses, if it is "in the general interest of the public".

The court also held that a directive principle such as Article 47 can be used to justify a restriction on citizens' rights under Article 19(1)(g).



Illegal 'service' under tobacco law COTPA

Under Section 31 of the Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (COTPA), the Centre can make further Rules to carry out the provisions of the Act. In 2008, the Prohibition of Smoking in Public Places Rules were brought into force.

Justice Nagaprasanna relied on Rule 4(3) which, after an amendment in 2017, states "No service shall be allowed in any smoking area or space provided for smoking". The court asked whether hookah smoking "is plain smoking which can be permitted in a designated area or it is a product of service that needs to be rendered".

To answer this question, the court compared hookah smoking to smoking a cigarette. It found that while "smoking zones created in designated places do not give any other service except creation of a smoking zone", hookah smoking "needs rendering of services in the designated area, as it requires external human hand to place all the apparatus on the tables like food or alcohol would be served on those tables".

Thus, the court held, "the very act of preparation to smoke hookah tobacco, cannot but be held to be a service", and the state is only implementing a prohibition against "service" that is already in place. The court held that the notification would also apply to "herbal hookah", which too requires an "instrument", and thus qualifies as a service under the Rules.

CENTRE ASKS STATES TO MONITOR, INSPECT ORGAN TRANSPLANTS INVOLVING FOREIGNERS

Pointing to reports of alleged commercial dealings in organ transplants involving foreign citizens, the Union Health ministry has directed state authorities to investigate such cases and take appropriate action for violations, if any.

— The Centre has directed the states to ensure that a NOTTO ID is generated for the donor and recipient for living-donor as well as deceased-donor transplants.

— Organs of the deceased donor are anonymously allocated to people waiting for a transplant, while an organ can be donated by a living person only if they (donor and recipient) are close relatives or share a close bond and want to donate altruistically.

— Commercial trading of organs is not allowed under Indian laws.

For Your Information:

— Allegations of "kidney scams" have surfaced at Delhi's Apollo hospital.

— In India, the embassies need to provide a 'Form 21' certifying the relationship between the donor and recipient for organ transplantation.

— Form 21 is a key document considered by the Authorisation Committee, which approves the transplants, to show that the donor and recipients are indeed related and there is no commercial trading of organs.

— The form mentions basic details of the donor and recipient such as name, age, sex, name of father or husband, and address, along with a photograph. The certificate needs the embassy to



mention the relationship between donor and recipient and state that the documents provided for identification are authentic.

PERU-BASED TOP POTATO RESEARCH CENTRE TO SET UP INDIA WING

SEVEN YEARS after China got a regional centre of Peru-based International Potato Centre (CIP), the premier research-for-development organisation with focus on potato and sweetpotato, India is set to get a similar centre. The CIP-South Asia Regional Centre (CIP-SARC) is expected to come up in Agra.

“The project is expected to cost \$20 million (about Rs 160 crore), of which India will contribute \$13 million (Rs 108 crore) and the rest will be funded by the CIP. The Uttar Pradesh government will be providing 10 hectares for the proposed centre.”

— Focus is on development of new varieties of potato and sweetpotato, which are climate resilient, disease-free and suitable for processing.

— In 2017, the CIP, which is headquartered in Lima, set up its first Asia centre in China, the world’s top potato producer and consumer.

— The proposed CIP-SARC will be the second major international agricultural research institute in India. In 2017, the Agriculture Ministry supported the establishment of a regional centre of the Philippines-based International Rice Research Institute (IRRI) in Varanasi.

— There are two centres of the Indian Council of Agricultural Research (ICAR) working on tuber crops in India– Shimla-based ICAR-CPRI (Central Potato Research Institute), working on potato, and Thiruvananthapuram-based ICAR-CTCRI (Central Tuber Crops Research Institute). working on sweetpotato.

— India is the second-largest potato producer and consumer in the world after China.

— Uttar Pradesh (15 million tonnes), West Bengal (15 million tonnes) and Bihar (9 million tonnes) were the top three potato producers in 2020-21.

For Your Information:

— Since the 17th century, European explorers recognized the value of tuber indigenous to the New World as a useful item in their store. European colonization led to the introduction of potatoes in colonies. (What do you understand by the term ‘New World’?)

T.N. USES INEXPENSIVE METHOD TO TREAT RODENTICIDE POISONING

Deaths caused by ingestion of rat poison containing yellow phosphorus is a major problem in a few States. A six-month survey carried out in six districts in Tamil Nadu in 2019 by the Tamil Nadu chapter of Indian Society of Gastroenterology (TN-ISG) found 450 people suffered from liver toxicity caused by ingestion of rat poison. Of them, 131 patients died while 28 were discharged in a moribund state. Extrapolating it for the entire State, researchers estimated 1,584 such cases in 2019 in just six months with about 554 deaths. Tamil Nadu has introduced a legislation to curb unrestricted access to rodenticide containing yellow phosphorus.

Until a few years ago, urgent liver transplantation was the only life saving option for such patients who developed acute liver failure. Beginning December 2017, a team of researchers from CMC

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



Vellore has been using plasma exchange through a centrifugal method — a simple and less expensive treatment — to save the lives of such people. Impressed by the success of the plasma exchange treatment by CMC Vellore and following the identification of rat poison (rodenticide) ingestion as the cause of liver failure and deaths, the Tamil Nadu government through the Tamil Nadu Accident and Emergency Care Initiative of the National Health Mission (TAEI-NHM) programme started using plasma exchange in six apex government hospitals to treat these patients in March 2022.

Prior to this, Madras Medical College, Stanley Medical College in Chennai and Coimbatore Medical College were using plasma exchange to treat rodenticide hepatotoxicity.

Currently, 17 government hospitals across 15 districts in the State undertake plasma exchange to treat rodenticide-induced acute liver injury and acute liver failure cases.

“Liver failure due to rat poison ingestion may be due to overactive immune responses. We have found markers for innate immune responses turned on in patients with acute liver failure following ingestion of rat poison containing yellow phosphorus. Plasma exchange dampens these overactive immune responses, which helps save lives,” says Dr. Uday Zachariah from the Department of Hepatology at CMC Vellore and a member of the team that initiated the plasma exchange programme for liver failure at CMC Vellore.

Worldwide, regular dialysis has not been shown to improve survival in patients with acute liver failure. “This may be because standard dialysis technique removes only small- and medium-sized molecules, while plasma exchange helps remove macro molecules too,” says Dr. Zachariah.

IUCN REPRESENTATIVE TO BE AN OBSERVER IN NILGIRI TAHR SURVEY

With a resolve to remove the Nilgiri Tahr (*Nilgiritragus hylocrius*) from the endangered status, the Tamil Nadu government will conduct a synchronised survey of the State animal from April 29.

The three-day exercise is being done to estimate the population of the Tahrs, which once roamed the length and breadth of the Anamalai and Nilgiris landscape. The animal is listed as an endangered species by the International Union for Conservation of Nature (IUCN) and protected under Schedule-I of the Wild Life (Protection) Act, 1972.

There are around 3,000 Tahrs in the Western Ghats, according to a report released by the World Wildlife Fund India in 2015, and a sizeable number of them is concentrated in the Anamalai Tiger Reserve (ATR).

In 2020, the Nature Conservation Foundation found around 510 individuals in the ATR, which houses the second-largest population of the species after the Eravikulam National Park in Kerala. “We have roped in WWF and the Wildlife Institute of India for the population estimation. The third is IUCN, whose country director will be an observer in the exercise,” said Supriya Sahu, Additional Chief Secretary to the Department of Environment, Climate Change and Forest.

For the purpose of the survey, being done in coordination with Kerala’s Forest Department, the habitats in Tamil Nadu have been divided into 13 forest divisions, 100 forest beats, and 140 feasible blocks. Emphasis has been given to areas along the Kerala border, Ms. Sahu said.



ENDURING CIRCLE OF LIFE

As the cool breeze of December begins to fade into the warm embrace of April, the Bay of Bengal coast of Tamil Nadu transforms into a sanctuary for olive ridley sea turtles (*Lepidochelys olivacea*). The turtles venture on to the beaches to nest and lay eggs before continuing their journey, leaving the eggs at the mercy of nature and, of late, conservation activists who work hard to protect them. A turtle usually lays around 100 eggs, which hatch after a period of 45 to 60 days. The hatchlings are ready to wade into the sea.

In Chennai, the tireless efforts of the Forest Department and non-governmental organisations such as the Students' Sea Turtle Conservation Network and TREE Foundation ensure that most of the nests are monitored. Volunteers and forest guards go on patrol every night during the nesting season and transport the eggs to temporary hatcheries to protect them from stray dogs and anthropogenic disturbances. The eggs are counted and monitored.

Once the eggs hatch, hatchlings are released into the sea in batches after dark. Over 12,200 hatchlings have ventured into the sea off the Chennai coast so far this year. During the 2022-23 nesting season, as many as 1.83 lakh hatchlings were released from Tamil Nadu, the highest in the past seven years. Further, in a fillip to the State's conservation efforts, some hatcheries this season were fitted with weather-monitoring devices to analyse the rise in temperatures and its effect on the turtles.

Sea turtles face numerous challenges in the waters, with one prominent concern highlighted by conservationists being the risk of entanglement in fishing gear.

On the coast, light pollution has been emerging as a prominent issue as bright lights from seaside resorts or late-night shacks tend to disorient the turtles.

It is believed that roughly one out of 1,000 turtles survive into adulthood. As they brave the waters, the hatchlings symbolise hope for the continuation of their species, reflecting the enduring cycle of life in the vast expanse of the ocean.

DreamIAS



BUSINESS & ECONOMICS

PAYING THEIR FAIR SHARE

“Tax treaties are integral to cross-border investment relations as they define the treatment of incomes that arise in one country accruing to a resident of another country. Their design is also a reflection of the underlying power equation. Developing countries often negotiate treaties that cede greater taxing rights in the hope of higher investments. Whether it is legitimate for third countries to avail of such benefits by routing investments through the preferential jurisdiction has been discussed widely.” In this context, recent India-Mauritius treaty amendments have become important.

— “The Base Erosion and Profit Shifting programme was to end the use of low-tax jurisdictions for tax avoidance. Since then the OECD — that was tasked with the redesign of international tax laws to push forward such reform — has developed a set of best practices under 15 action points. One among these was the multilateral instrument (MLI) that allowed countries the option to select tax treaties and provisions therein that would be amended suitably and swiftly. The instrument received wide support.”

— “One of the key reforms it initiated was the inclusion of a provision for prevention treaty abuse as a minimum standard and an amendment of the preamble to the treaties. The latter is to prevent non-taxation or reduced taxation through tax evasion, including treaty-shopping arrangements that provide benefits to residents of other jurisdictions and anti-abuse rules that will enable tax administrations to deny treaty benefits in certain circumstances.”

— “India is among the signatories to the MLI and in line with its position, the recent amendment to the India-Mauritius treaty signals the keenness to plug the well-known loophole.”

— “It is expected that the amendments to the treaty allow the authorities to move beyond the residency certificate and assess the principal purpose of an arrangement or transaction.

— “16 per cent of FDI inflows in 2021-22 were from Mauritius, the reform will impact the composition of flows, as was observed after the amendments in 2017 when capital gains became taxable at source in India.”

For Your Information:

— India and Mauritius, on March 7, signed a protocol at Port Louis, amending the Double Taxation Avoidance Agreement (DTAA) between the two nations.

— The amended pact includes the Principal Purpose Test (PPT), which is in line with the global efforts against treaty abuse, particularly under the BEPS (Base Erosion and Profit Shifting) framework. The PPT essentially implies that the tax benefits under the treaty will not be applicable if it is established that obtaining that duty benefit was the principal purpose of any transaction or arrangement.

IP ISSUES: USTR PLACES INDIA ON PRIORITY WATCH LIST

India remains “one of the most challenging” major economies with respect to the protection and enforcement of intellectual property, Biden Administration said on Thursday as it placed the country on the Priority Watch List on its 2024 Special 301 Report.

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India along with Argentina, Chile, China, Indonesia, Russia, and Venezuela have been placed on the 2024 Special 301 Report on the adequacy and effectiveness of US trading partners' protection and enforcement of intellectual property (IP) rights released by the US Trade Representative.

— While there has been progress under the US-India Trade Policy Forum in addressing certain issues with trademark infringement investigations and pre-grant opposition proceedings, numerous long-standing concerns remain, the USTR report said.

Do you know?

The World Intellectual Property Day is celebrated on April 26. The theme of this year is IP and the SDGs: Building our common future with innovation and creativity.

SOBERING ASSESSMENT

The global economy has avoided the spectre of a debilitating recession, with the IMF last week raising its forecast for worldwide aggregate growth in 2024 to 3.2%, from the 2.9% it had projected in October. The IMF has underlined the fact that the global economy has, with surprising resilience, ridden out several adverse shocks as well as 'significant central bank interest rate increases aimed at restoring price stability' and sustained the growth momentum, largely on the back of advanced economies led by the U.S. undergirding demand. However, the Fund has also pointed to a growing gulf between the economic north and south by observing: "A troubling development is the widening divergence between many low-income developing countries and the rest of the world. For these economies, growth is revised downward, whereas inflation is revised up." These poorest countries, in Africa and including some Latin American, Pacific island and Asian nations, had also suffered the most scarring from the COVID-19 pandemic in terms of estimated drop in output relative to pre-pandemic projections, and were struggling to recover. To compound their woes, these economies were now saddled with a mounting debt service burden that was severely impairing their ability to spend on vitally needed public goods including better education, health care and social nets to improve food security.

The IMF's twin development lender, the World Bank, has, in a separate report, pointed out that for the first time in this century, half of the world's 75 poorest countries were experiencing a widening income gap with the wealthiest economies, marking a "historic reversal" of development. As the World Bank Group's Chief Economist Indermit Gill observed in a blog post on the lender's site, "[the 75 poorest countries] are home to a quarter of humanity — 1.9 billion people... and are home to 90% of people facing hunger or malnutrition". More distressingly, while these countries were midway through what he termed, potentially 'a lost decade', Mr. Gill averred that the rest of the world was "largely averting its gaze" even as the governments in at least half these nations were mostly paralysed by debt distress. Citing the examples of South Korea, China and India as countries that had transitioned from being borrowers of low-interest loans from the World Bank's International Development Association into economic powerhouses that were today IDA donors, the Bank's chief economist stressed it was imperative that the world's richer countries financially support the poorest nations. Given that the world needs to tap every reserve of economic potential to achieve universal peace and prosperity, it can ill afford to turn its back on a quarter of its people.



NET DIRECT TAX COLLECTIONS EXCEED 2023-24 TARGET

India's net direct tax collections grew 17.7% in 2023-24 to hit ₹19.58 lakh crore, marginally surpassing the revised estimates for the year, thanks to a surge in personal income tax whose share of the tax kitty rose to 53.3% from 50.06% in the previous year while corporate taxes' contribution dipped to 46.5% from 49.6%.

Provisional data released by the Finance Ministry on Sunday also showed that the uptick in net tax collections over the final fortnight of the financial year was driven by personal income tax (PIT) and securities transaction tax (STT) collections, while the net corporate tax kitty shrank a little.

PIT and STT receipts also grew at almost double the pace of corporate taxes last year.

As of March 17, net direct taxes had risen 19.88% to ₹18.9 lakh crore, with PIT and STT accounting for 51.4% of the receipts and corporate tax yielding ₹9.14 lakh crore.

By March 31, PIT and STT inflows had increased by ₹73,000 crore, lifting their full-year tally to ₹10.44 lakh crore.

Although gross corporate tax collections increased from ₹10.98 lakh crore as of March 17 to ₹11.32 lakh crore by the close of the financial year, the net tax receipts from corporates, calculated after adjusting for refunds, dropped from ₹9.14 lakh crore on March 17 to ₹9.11 lakh crore.

The gross direct tax kitty for 2023-24 stood at ₹23.37 lakh crore, reflecting a growth of 18.5% over the ₹19.72 lakh crore tally in 2022-23.

Of this, gross PIT and STT receipts accounted for ₹12.01 lakh crore, rising ₹76,000 crore between March 17 and 31.

GOVT PLANS TO FOCUS ON 20 ITEMS AS AGRI EXPORTS SLIPS 9 PER CENT

As India's agricultural exports slipped nearly 9 per cent between April to February in FY24 to \$43.7 billion due to the Red Sea crisis, the Russia-Ukraine war, along with domestic restrictions, the government has begun formulating plans to boost exports of 20 items, including bananas, mangoes, potatoes, and baby corn, that have significant growth potential in the global export markets.

— At present, India's share is low in global exports. According to the Additional Secretary in the Ministry of Commerce and Industry, Rajesh Agarwal, India's share is about 2.5 per cent in global exports, and the aim is to increase it to about 4-5 per cent in the coming years.

— The items include fresh grapes, guava, pomegranate, watermelon, onion, green chili, capsicum, okra, garlic, groundnut, alcoholic beverages, cashew nut, buffalo meat, jaggery, and natural honey.

— While India's exports of these commodities in 2022 were \$9.03 billion, global imports were \$405.24 billion, with the biggest buyers being the United States, Malaysia, Canada, Russia, Germany, France, Korea, China, Indonesia, Japan, Italy, Belgium, and the United Kingdom.

— The export ban and restrictions on commodities like rice, wheat, sugar, and onions have hit agri-exports by about \$5-6 billion in the last fiscal year.



RBI SETS DRAFT NORMS FOR WEB AGGREGATORS OF LOAN PRODUCTS

The Reserve Bank of India (RBI) has proposed that banks and non-banking finance companies (NBFCs) should ensure that their loan service providers (LSPs) to provide a digital view of all the loan offers available to the borrower from all the willing lenders that the LSP has arrangements.

The digital view, the RBI said, should include the name of the bank of the NBFC extending the loan, the amount and tenor of loan, the annual percentage rate and other key terms and conditions in a way that enables the borrower to make a fair comparison between various offers.

The RBI set these terms in the draft guidelines for the regulatory framework for the aggregation of loan products by lending service providers (LSP) in order to enhance transparency and enable borrowers to have prior information about potential lenders. While the LSP can adopt any mechanism to ascertain the willingness of the lenders to offer a loan, the RBI said it should follow a “consistent approach” that must be disclosed suitably on their website.

A link to the key facts statement (KFS) must also be provided in respect of each of the regulated entities, it said.

The content displayed by the LSP should be “unbiased” and should not directly or indirectly promote or push a product of a particular lender, including by use of any practices or deceptive patterns, to mislead borrowers into choosing a particular loan offer, the central bank said.

LSP is an agent of a regulated entity (banks and NBFCs) who carries out one or more of lender’s functions or part thereof in customer acquisition, underwriting support, pricing support, servicing, monitoring, recovery of specific loan or loan portfolio on behalf of REs in conformity with extant outsourcing guidelines issued by the Reserve Bank.

RBI said many of the LSPs offer aggregation services for loan products, wherein an LSP, or a regulated entity (banks and NBFCs) acting as an LSP, has outsourcing arrangements with several lenders and the Digital Lending App or Platform (DLA) of the LSP or regulated entities matches the borrower to one of the lenders.

In such cases, particularly where an LSP has arrangements with multiple lenders, identity of the potential lender to the borrower may not be known upfront to the borrower, it said.

ILLEGAL FOREX TRADING: RBI CAUTIONS BANKS, CUSTOMERS

The Reserve Bank of India (RBI) has cautioned banks and customers again about unauthorised entities offering foreign exchange trading using the banking channels. In a circular issued on Wednesday, the RBI said it has come across instances of unauthorised entities offering foreign exchange (forex) trading facilities to Indian residents with promises of disproportionate and exorbitant returns.

Key takeaways:

- The RBI had issued warning against illegal forex trading several times in the past.
- According to the RBI, these entities are providing options to residents to remit/deposit funds in Rupees for undertaking unauthorised forex transactions using domestic payment systems like online transfers and payment gateways.



— “There is a need for greater vigilance to prevent the misuse of banking channels in facilitating unauthorised forex trading. AD Cat-I banks are, therefore, advised to be more vigilant and exercise greater caution in this regard,” the RBI said.

— The central bank said banks should advise their customers to deal in forex only with ‘Authorised Persons’ and on ‘authorised ETPs’ and give wide publicity to the list of ‘Authorised Persons’ and the list of ‘authorised ETPs’ available on the RBI website. It also asked category-1 banks to give publicity to the ‘Alert List’ and Press Releases issued by the RBI in this regard.

For Your Information:

— Forex reserves are external assets in the form of gold, SDRs (special drawing rights of the IMF) and foreign currency assets (capital inflows to the capital markets, FDI and external commercial borrowings) accumulated by India and controlled by the RBI.

— The Reserve Bank functions as the custodian and manager of forex reserves, and operates within the overall policy framework agreed upon with the government.

SFBs SHOULD BE WORTH RS 1,000 CR TO BECOME UNIVERSAL BANKS, SAYS RBI

The Reserve Bank of India (RBI) has said small finance banks (SFBs) should have a minimum net worth of Rs 1,000 crore to become universal banks in accordance with the on-tap licensing norms.

According to the central bank, SFBs aspiring to become a universal bank need to have scheduled status with a satisfactory track record of performance for a minimum period of five years. Also, the shares of the bank should have been listed on a recognised stock exchange, the RBI said in a circular.

Further, these SFBs also need to have a net profit in the last two financial years besides having gross non-performing assets (GNPA) and net non-performing assets (NNPA) of less than or equal to three per cent and one per cent, respectively in the last two financial years, the RBI said.

On April 12, the RBI rejected applications received from Dvara Kshetriya Gramin Financial Services Pvt Ltd and Tally Solutions Pvt Ltd to start SFBs in the private sector. The two entities had applied to the RBI for setting up a SFB in 2021 under the guidelines for on-tap licensing.

The RBI circular said there is no mandatory requirement for an eligible SFB to have an identified promoter. However, the existing promoters of the eligible SFB, if any, should continue as the promoters on transition to a universal bank. “Addition of new promoters or change in promoters will not be permitted for an eligible SFB while transitioning to the universal bank,” it said. There should be no new mandatory lock-in requirement of minimum shareholding for existing promoters in the transitioned universal bank.

“There should be no change to the promoter shareholding dilution plan already approved by the Reserve Bank,” it said.

“The eligible SFBs having diversified loan portfolio will be preferred,” the RBI said.

**ALL-IN-ONE INSURANCE PRODUCT: IRDAI PRICES BIMA VISTAAR AT RS 1,500 PER POLICY**

The Insurance Regulatory and Development Authority of India (Irdai) has proposed to price Bima Vistaar, its ambitious all-in-one affordable mass product aimed at the rural areas of the country, at Rs 1,500 per policy.

The regulator made an announcement regarding the launch of Bima Vistaar and its prices at a summit of insurance CEOs, addressed by IRDAI chairman Debasish Panda on Thursday. The product is designed to provide a basic social safety net cover with combined features of life, health, personal accident and property insurances.

The product includes life cover with a premium of Rs 820, health cover at Rs 500, personal accident cover at Rs 100 and property cover at Rs 80. If taken for the entire family on a floater basis, the policy will cost Rs 2,420, with an additional Rs 900 charged for the rest of the family members.

The sum assured for life, personal accident and property covers is Rs 2 lakh each, while the health cover, known as hospi cash, offers a sum assured of Rs 500 for 10 days, with a maximum amount of Rs 5,000 available without producing bills or documents. Agents selling Bima Vistaar policies stand to earn a commission of 10 per cent, incentivising wider distribution and adoption of the product.

Narendra Bharindwal, Vice President at Insurance Brokers Association of India (IBAI), said the comprehensive coverage offered by the Bima Vistaar policy underscores its importance in safeguarding individuals and families against various risks and uncertainties. "This initiative not only encourages more people to invest in insurance for their protection but also promotes financial inclusion," he said.

In the financial year 2022-23 (FY23), India's overall insurance penetration was down at 4 per cent from the level of 4.2 per cent in FY22, according to a Swiss Re Sigma report. This is much below the global insurance penetration of 6.8 per cent. In FY23, the insurance density in India increased from \$91 in FY22 to \$92.

"The competitive pricing of Bima Vistaar is expected to benefit many individuals and families by providing them with a reliable insurance solution at a reasonable cost. In addition to applauding IRDAI's commendable initiative with Bima Vistaar, we also encourage the inclusion of provisions that enable intermediaries to effectively promote and sell these products," Bharindwal said. Insurers said the claim settlement for the property part of the combo solution will be on parametric basis, which means any payout is based on the magnitude of the event, rather than the magnitude of the losses. With 25 per cent of damage, 50 per cent of the sum assured will automatically be paid to the policy holder and with more than 40 per cent damages 100 per cent or Rs 2 lakh will be settled as claims. Irdai, along with the General Insurance Council (GIC) and Life Insurance Council (LIC), was working towards creating a UPI-like moment for insurance.

Panda called the UPI-like moment in the insurance as 'Bima Trinity', which will include Bima Sugam, the digital platform, Bima Vistaar and Bima Vahak, a women-centric distribution channel to focus on reaching untapped/rural areas.

"Bima Sugam will be the protocol or the platform. Bima Vistaar is a product where we are trying to design it in a manner which will be accessible to the common man. It will be a bundled product of life, health, causality and property," Panda had said. In October 2022, IRDAI had set up a

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committee to explore and recommend on how to bring about synergies in the working and operations of Bima Vahak, Bima Vistaar and the digital platform – Bima Sugam.

These products will be distributed by Bima Vahak. Initially, every gram sabha will have at least one Bima Vahak, who will visit every house in their area and convince them about the product.

”By leveraging the expertise and reach of intermediaries, such as brokers, agents, and insurance advisors, we can ensure that Bima Vistaar reaches its full potential in reaching and serving the diverse needs of our population,” Bharindwal said.

As Bima Vistaar is considered as a mass product for increasing insurance penetration in the country, it is expected that unlike micro insurance products, it will generate a large sales volume. Now that the premium has been decided, it will be possible to do a cost benefit analysis of the product for its long-term sustainability.

AMID INDIA’S CHIP PUSH, TAIWAN FLAGS TALENT GAPS, HIGH IMPORT TARIFF

A “cumbersome” administrative structure, lack of experienced engineers, high tariffs on electronics component imports and inadequate infrastructure — these are some of the challenges that India needs to address before chip companies from the island territory start to commit serious investments, a top Taiwanese government representative said.

Joseph Wu, Taiwan’s Minister of Foreign Affairs, said- In order to get the major semiconductor production to move to India, we need to think about the whole supply chain coming together.

— India’s \$10 billion chip incentive scheme has found some success in attracting a foundry investment from Tata and PSMC.

— The Indian government has created a dedicated task-force called the India Semiconductor Mission, which aims to serve as a focal point for an efficient implementation of New Delhi’s chip ambitions.

— Taiwanese chip companies have red-flagged India’s lack of adequate infrastructure needed to support the task of making semiconductors.

For Your Information:

— In December 2021, the government had rolled out a Rs 76,000 crore chip incentive scheme, under which the Centre offered half the amount of a plant’s capital expenditure costs as subsidy.

—India’s chip incentive plans are focused on boosting all three aspects of the semiconductor ecosystem – packaging units called ATMP facilities; assembly and testing projects called OSAT plants; and full-scale foundries that can manufacture chips.

— Semiconductors are highly complex products to design and manufacture, that provide the essential functionality for electronic devices to process, store and transmit data.



HOW IS INDIA PLANNING TO BOOST EV PRODUCTION?

The story so far:

The Union government on March 15 approved a policy to promote India as a manufacturing hub for Electric Vehicles (EVs). The minimum investment cap has been set at ₹4,150 crore.

What does the policy stipulate?

The policy broadly clears the path for global EV makers like Tesla and Chinese EV maker BYD to foray into the Indian markets. The central goal of this policy is to enable transitioning to localised production in a commercially viable manner and plan as per local market conditions and demand. The most significant provision is the reduction of import duty on electric vehicles imported as a Completely Built Unit (CBU) with a minimum cost, insurance and freight (CIF) value of \$35,000 to 15% (for a five-year period) from the present 70%-100%. This is provided the maker sets up a manufacturing unit within three years. The policy also stipulates that a total duty of ₹6,484 crore or an amount proportional to the investment made — whichever is lower — would be waived on the total number of EVs imported. It must be noted that, a maximum of 40,000 EVs can be imported under the scheme at not more than 8,000 units a year, provided the minimum investment made is \$800 million. Another important aspect of the scheme is localisation targets. Manufacturers have three years to set up their manufacturing facilities in India. They are expected to attain 25% localisation by the third year of incentivised operation and 50% by the fifth year. Should the localisation targets not be achieved, and if the minimum investment criteria as defined under the scheme is not met, the bank guarantees of the manufacturers would be revoked.

What about domestic players?

Tata Motors, as reported by Reuters in December 2023, had opposed the Tesla proposal. It argued that lowering duties would hit the domestic industry and “the investment climate will get vitiated.” Assessing the policy from the perspective of domestic players, Rajat Mahajan, Partner at Deloitte India told The Hindu, “Most Indian players are leading in the segments below ₹29 lakh as of now, and hence this policy benefit (from 15% import duty) will likely be for Original Equipment Manufacturers (OEMs) catering to consumers in the higher end of the market.” He added that the policy makes it lucrative for global EV players and Indian JVs with such players, to expand sales and manufacture in India.

How does it cater to Indian markets?

I.V. Rao, Distinguished Fellow at The Energy and Resources Institute (TERI), thinks that global players in India must consider local circumstances, like the environment, roads, and usage conditions. Mr. Mahajan from Deloitte notes that while penetration in the two-and three-wheeler segment has been significant, passenger vehicles have seen only a 2.2% contribution thus far. “This is mainly due to lack of proper charging infrastructure, range anxiety, and limited number of products in the affordable range due to limited localisation,” he observed. The Confederation of Indian Industry (CII) in a July 2023 report had observed that India may require at least 13 lakh charging stations by 2030 to support “aggressive EV uptake.”

REITS, INVITS MOBILISED ₹1.3 LAKH CR. OVER THE LAST 4 YEARS, RBI DATA SHOWS

Experts and stakeholders are of the view that with India growing at a fast pace, REITs and InvITs are emerging as alternative investment instruments, especially for high net-worth individuals.

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“India has been a late adopter of real estate investment trusts (REITs) and infrastructure investment trusts (InvITs),” the RBI officials wrote in an article on ‘State of Economy’. “However, the market is flourishing,” they added.

March witnessed the listing of an InvIT, which raised ₹2,500 crore via public issue attracting substantial interest from foreign investors. The RBI noted that SEBI had progressively reduced the minimum investment size and trading lot, enabling greater retail participation in the hybrid instruments.

To further develop this space, SEBI notified regulations for small and medium REITs on March 8.

“This is expected to facilitate pooled investment in a wider range of real estate assets as a regulated financial product, thereby facilitating further growth of REITs in India,” the article authors led by RBI deputy governor Michael Debabrata Patra observed.

WHAT ARE THE NEW GREEN CREDIT PROGRAMME RULES?

The story so far:

On April 12, the Environment Ministry issued further guidelines on its Green Credit Programme (GCP), two months after it had prescribed rules governing the first initiative, afforestation. Modifying the rules, an official said, will prioritise the restoration of ecosystems over mere planting of trees.

What is the Green Credit Programme?

This programme was officially unveiled in October 2023 and has its provenance in Mission Life, a principle frequently articulated by Prime Minister Narendra Modi. Its goal is to lay an emphasis on sustainability, reduce waste and improve the natural environment. The GCP programme presents itself as an “innovative, market-based mechanism” to incentivise “voluntary actions” for environmental conservation, according to a document of the Environment Ministry. Under this, individuals, organisations and companies — public and private — would be encouraged to invest in sectors ranging from afforestation, water conservation, stemming air-pollution, waste management, mangrove conservation and in return be eligible to receive ‘green credits.’ An autonomous body of the Ministry, the Indian Council of Forestry Research and Education (ICFRE), is in charge of administering the programme. They will define methodologies to calculate ‘green credits’ that result from the activities prescribed. They will also manage a trading platform whereby such credits could be traded.

In February, the Ministry prescribed the rules governing the first of these initiatives — afforestation. Broadly, companies, organisation and individuals could offer to pay for afforestation projects in specific tracts of degraded forest and wasteland. It said, the actual tree planting would be carried out by the State forest departments. Two years after planting and following an evaluation by the ICFRE, each such planted tree could be worth one ‘green credit.’ So far, The Hindu has learnt that forest departments of 13 States have offered 387 land parcels of degraded forest land, worth nearly 10,983 hectares. Those who are successful in fulfilling the criteria will be given an estimate of the costs involved in afforestation. Public sector companies such as Indian Oil, Power Grid Corporation of India, the National Thermal Power Corporation, Oil India, Coal India, National Hydropower Corporation have reportedly registered to invest in the programme, a Ministry official confirmed.



Why has the GCP stoked controversy?

The GCP has not become operational but critics have questioned multiple aspects of it. The first is that it makes a commodity out of environmental conservation. India's forest conservation laws oblige any industry, that is allowed to raze forests and use that land for non-forestry purposes, to provide an equivalent amount of non-forest land to forest authorities and pay them to afforest that land.

The GCP programme for afforestation says that companies can "exchange" their credits for "complying with compensatory afforestation". This could be a way, critics say, to ease forest diversion requirements for mining and infrastructure companies. Secondly, planting trees does not automatically boost ecosystems. India has about 200 types of forests. Some are grasslands, some are dominated by shrubs and there have been studies to show that planting the wrong types of trees could foster invasive species or prevent a sustainable ecosystem. There is also a threat that natural forests could be razed and invasive monocultures promoted. Finally, the GCP also says that green credits that result in storing carbon (from trees) may be used for carbon trading. This again is controversial as the math equating these activities is not clear.

How has the government responded?

In its latest update, the Ministry has issued the guidelines that States must rely on to calculate what it would cost to restore a degraded forest landscape. The Ministry has tweaked an earlier requirement that there be a minimum of 1,100 trees per hectare to qualify as a reforested landscape and left it to States to specify them. "Not all degraded forests can support that kind of density. Thus, in some places shrubs, herbs and grasses may be suitable for restoring the ecosystem," Nameeta Prasad, Joint Secretary, in the Environment Ministry told The Hindu. Preference would be given to indigenous species. The programme was currently in a "pilot project" mode and questions such as how shrubs and grasses could be quantified in terms of green credits were still being worked out, she added. Moreover, companies would not be able to offset all their obligations under compensatory afforestation using green credits, but could claim a portion of it, she clarified.

WHY DOES THE CENTRE WANT TO MODIFY THE 2G SPECTRUM VERDICT?

The story so far:

More than a decade after the Supreme Court cancelled 122 telecom licenses in the landmark 2G spectrum scam judgment, the Union government has moved an application to allocate spectrum administratively, bypassing auctions. An administrative allocation would give the government control over the selection of operators. On Monday, Attorney General R. Venkataramani, appearing for the Centre made a plea for urgent listing of the application before Chief Justice of India D.Y. Chandrachud. The development comes a month after the Delhi High Court admitted the CBI's appeal against the acquittal of former Union Telecom Minister A. Raja and other high-profile politicians in the scam.

What is the 2G spectrum scam?

The alleged 2G spectrum allocation scam is said to have originated in 2008 when the then Congress-led United Progressive Alliance (UPA) government sold 122 2G licences on a first-come-first-serve (FCFS) basis to specific telecom operators. In its charge sheet filed in April 2011, the



CBI alleged that there was a loss of ₹ 30,984 crore to the exchequer as a result of discrepancies in the allocation process.

In the meantime, the Centre for Public Interest Litigation and Subramanian Swamy filed petitions in the top Court alleging a ₹70,000 crore scam in the grant of telecom licenses in 2008. In February 2012, a division Bench of the Supreme Court cancelled the licenses while cautioning that an FCFS basis for the allocation of scarce natural resources can be prone to misuse.

Advocating for competitive auctions instead, the Court said, “In our view, a duly publicised auction conducted fairly and impartially is perhaps the best method for discharging this burden and the methods like first-come-first-served when used for alienation of natural resources/public property are likely to be misused by unscrupulous people who are only interested in garnering maximum financial benefit and have no respect for the constitutional ethos and values.” It emphasised that the burden lies on the State to ensure that the “non-discriminatory method” of the auction is adopted “by giving wide publicity so that all eligible persons can participate in the process”.

What is the Centre’s plea?

In its plea, the Centre has pointed out that the assignment of spectrum is required to discharge sovereign and public interest functions such as security, safety, and disaster preparedness. The Centre elaborated that administrative allocation is required when demand is lower than supply or for space communication. In such cases, it would be “more optimal and efficient for spectrum to be shared by multiple players, rather than being broken up into smaller blocks for the sole purpose of exclusive assignment”, it said.

The Court was apprised that following its 2012 ruling, the administrative assignment of non-commercial spectrum has been on a purely interim basis, subject to the government’s final decision on pricing and policy. However, it was now time to “firm up a spectrum assignment framework in suitable cases to best subserve the common good”, the government said. Accordingly, the plea envisages the following prayer — “(a) Issue appropriate clarifications that the government may consider the assignment of spectrum through the administrative process if so determined through due process in accordance with the law, and if such assignment is in pursuit of governmental functions or the public interest so requires, or auction may not be preferred due to technical or economic reasons”. The Union government has also placed reliance on the observations made by a Constitution Bench while deciding a Presidential reference concerning the February 2012 verdict. The Bench pointed out that the auction method prescribed in the verdict was not to be considered a “constitutional mandate” for the alienation of natural resources excluding spectrum.

What is the significance of the new telecom law?

The Telecommunications Act, 2023, passed by the Parliament last year empowers the government to assign spectrum for telecommunication through administrative processes other than auction for entities listed in the First Schedule. These include entities engaged in national security, defence, and law enforcement as well as Global Mobile Personal Communication by Satellites such as Space X, and Bharti Airtel-backed OneWeb. The government can also assign part of a spectrum that has already been assigned to one or more additional entities, known as secondary assignees, and even terminate assignments where a spectrum or a part of it has remained underutilised for insufficient reasons.



KEY BENEFITS OF REGULARLY TRACKING YOUR CREDIT SCORE

Credit score is a numeric value that represents how an individual has handled credit in the past.

Based on one's credit behaviour, which includes factors such as timely repayment of EMIs and credit-card bills and number and frequency of credit enquiries made, each individual's credit score is calculated by credit bureaus. This credit score is updated by the bureaus each month.

When one applies for any kind of loan or a credit card, lenders check the individual's credit score and report, to gauge the creditworthiness and risk associated with providing them any type of credit.

A healthy credit score usually enables one to have a wider choice of offers to choose from and get the best offer available.

Regular tracking

Along with displaying good credit behaviour, a crucial aspect behind maintaining a healthy credit score is regular tracking and taking timely action.

A common misconception related to credit score is checking it often leads to a dip in the score. One needs to note checking your own credit score directly through the bureau or a credit-score platform, is called a soft enquiry and has zero impact on one's credit score, regardless of how many times you check your score. In fact, soft enquiries are not mentioned in your credit report.

It is only when one applies for credit, and lenders request your credit report from a credit bureau to check your credit history, it is mentioned in the credit report.

This is called a hard enquiry. Frequent hard enquiries within a short space of time may have a negative impact on your credit score.

Why track?

Building and then maintaining a healthy credit score consistently is key to one's financial health as it can help in easy access to credit in time of need and to fulfill crucial life-goals like home purchase, for which usually a home loan is required by most.

Here, regular monitoring of one's credit score and report is key, because it helps in the following issues.

Credit awareness

Once one starts tracking their credit report regularly, it leads to deep awareness around good credit behaviour such as paying EMIs and credit card bills on time, not making too many enquiries too often, not displaying any signs of over-dependence of credit etc.

Those who have had a poor credit history, leading to damaged credit and a poor score, can, through regular tracking, understand factors that might be impacting one's score and take corrective actions to repair the damage. It usually takes a considerable time to improve one's credit score, and hence, regular tracking and monitoring the progress is crucial for those with average or poor credit score.



Credit behaviour

Tracking leads to good credit behaviour, which over a period of time results in a healthy credit score. A strong credit score leads to several benefits, including higher eligibility and wider choice of lenders and offers.

Many lenders also offer lower interest rates on home loans and personal loans to applicants having higher credit scores.

A high credit score also helps one take advantage of pre-approved offers, which enables easy access to credit, usually with minimum or zero documentation and seamless and quick processes.

Spot, rectify errors

One's credit report at times can have some errors, which can lead to an adverse impact on the credit score. The errors can be errors or a result of fraudulent activities such as someone using your PAN to open a loan account.

Rectify error

In both cases, one needs to immediately raise a grievance with the credit bureau and get the error rectified. Checking credit report once every 2-3 months would help detect any errors in the report.

Monitoring of credit score has been made easy and seamless by credit bureaus and free credit score digital platforms. In fact, many free credit-score platforms, via partnerships with credit bureaus, enable comparison of score across bureaus and ease of monthly tracking.

INSURING THE FUTURE

The Insurance Regulatory and Development Authority of India (IRDAI), the apex regulator of insurance products, has asked companies to enable a wide demographic of citizens to benefit from health insurance. Most significantly, it directs insurance providers to make health insurance available to senior citizens, as those above 65 are currently barred from issuing new policies for themselves. This is clearly an acknowledgement of demographic changes underway in India. Though India's population figures have not been officially accounted for since 2011, estimates from the UN Population Fund and experts suggest that India's is nearly level with China and may have surpassed it sometime in 2023. The India Ageing Report, 2023, which draws from UN projections, estimates that India's cohort of seniors — those above 60 — will increase from about 10% of the population (149 million in 2022) to 30% (347 million) by 2050. That is more than the current population of the U.S. Several of the most developed countries already have their senior demographic (65-plus) ranging from 16% to 28%. That is already precipitating considerable worry within these populations on access to health care, affordable medicine and appropriate care-giving infrastructure to support them. Some of these economically developed countries have government-funded public health systems and others are entirely dependent on private health care, with cost being a significant determinant in access to quality care. In many of these countries, there is no entry barrier to health insurance policies, though, following principles of actuarial economics from centuries ago, health insurance gets progressively, and sometimes exponentially, more expensive as age advances.

Already the small, single-digit percentage of India's economic elite can afford the equivalent of "family floater" plans that take care of individuals and their parents at a cost lower than what



individual senior-citizen health insurance would cost. If the only effect of the IRDA's recent circular is to provide many more unaffordable health insurance policies, it would be equivalent to admiring the icing on an inedible cake. Much has been made of the next two decades being critical to India's future, on the reasoning that this is the time that India must reap its 'demographic dividend'. This is premised on a large proportion of the workforce moving out of agriculture and inevitably followed by a breakdown of the traditional care-giving structure for the aged. The experience in several southern Indian States is telling. Thus, broadening the eligibility of health insurance should be accompanied by a massive upgradation of affordable health care.

For Your Information:

— According to the National Health Authority- Ayushman Bharat, a flagship scheme of Government of India, was launched as recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC). This initiative has been designed to meet Sustainable Development Goals (SDGs) and its underlining commitment, which is to "leave no one behind."



DreamIAS



LIFE & SCIENCE

INJURIES AT SPACEX EXCEED INDUSTRY AVERAGE FOR SECOND YEAR

The 2023 records, newly disclosed by the Occupational Safety and Health Administration (OSHA), also show that injury rates at some SpaceX facilities grew worse than those the company had reported in 2022.

At its manufacturing-and-launch facility in Brownsville, Texas, for instance, SpaceX reported 5.9 injuries per 100 workers, surpassing its rate of 4.8 injuries in 2022 and topping a space industry average of 0.8.

The company's high injury rate last year was the subject of an investigation that found at least 600 previously unreported worker injuries at the rocket and satellite company. Those injuries, Reuters reported, led to crushed limbs, amputations, serious head injuries, and one death.

SpaceX didn't respond to requests seeking comment on the latest figures.

Safety experts say the high injury rates should be of concern for SpaceX clients, including the National Aeronautics and Space Administration, or NASA. The federal space program has increasingly relied on SpaceX in recent years and as of 2022 had paid the company at least \$11.8 billion (₹98,300 crore) for various contracts.

"NASA should be concerned about the quality of the work," said David Michaels, a former OSHA administrator who is now a professor at The George Washington University, Washington, D.C. High injury rates, he added, can be "an indicator of poor production quality."

A NASA spokesperson didn't respond to a request for comment. OSHA also didn't respond to questions about SpaceX's injury rate.

Reuters calculated the latest injury rates using data published by OSHA last week. The data for 2023 is the most complete yet provided by SpaceX, which reported injuries from eight major facilities, three more than it had in 2022.

In years prior, SpaceX hadn't reported any data for most of its sites, which include manufacturing, launch, and other facilities.

At a unit that retrieves rocket boosters in the Pacific Ocean, SpaceX last year reported 7.6 injuries per 100 workers, more than nine-times the industry rate.

Neither the company nor Mr. Musk, its billionaire founder and chief executive, have publicly addressed SpaceX's safety record in detail.

Gwynne Shotwell, SpaceX's chief operating officer, in March reposted a video on social media of emergency chutes being tested at a company site in Florida. Commenting on the video on X, the social media company that's also controlled by Mr. Musk, she wrote that "astronaut and personnel safety is SpaceX's highest priority."



EUROPE IS 'WARMING FASTER THAN ANY OTHER CONTINENT'

The U.N.'s World Meteorological Organisation and the European Union's climate agency, Copernicus, said in a joint report the continent has the opportunity to develop targeted strategies to speed up the transition to renewable resources like wind, solar, and hydroelectric power in response to the effects of climate change.

The continent generated 43% of its electricity from renewable resources last year, up from 36% the year before, the agencies say in their European State of the Climate report for last year. More energy in Europe was generated from renewables than from fossil fuels for the second year running.

The latest five-year averages show temperatures in Europe are now running 2.3 degrees Celsius above pre-industrial levels, compared to 1.3 degrees Celsius higher globally, the report says.

"Europe saw yet another year of increasing temperatures and intensifying climate extremes — including heat stress with record temperatures, wildfires, heat waves, glacier ice loss and lack of snowfall," said Elisabeth Hamdouch, the deputy head of unit for Copernicus at the EU's executive commission.

The report serves up a continental complement for WMO's flagship state of the global climate report, which has been published annually for three decades, and this year came with a "red alert" warning that the world isn't doing enough to fight the consequences of global warming.

Copernicus has reported that March marked the 10th straight month of record monthly temperatures. The average sea-surface temperature for the ocean across Europe hit its highest annual level in 2023, the Europe report said.

The report focuses this year on the impact of high temperatures on human health, noting that deaths related to heat have risen across the continent. It said more than 150 lives were lost directly last year in connection with storms, floods and wildfires. The cost of weather- and climate-related economic losses in 2023 were estimated at more than 13.4 billion euros.

"Hundreds of thousands of people were affected by extreme climate events in 2023, which have been responsible for large losses at continental level, estimated to be at least in the tens of billions of euros," said Copernicus director Carlo Buontempo.

Extreme weather fanned heat waves, wildfires, droughts and flooding, the report said. High temperatures have contributed to a loss of glacier ice on the continent, including in the Alps — which have lost about 10% of their remaining glacier ice over the last two years.

EXPRESS VIEW ON ASIA CLIMATE REPORT: WHY A HOTTER WORLD IS MORE DANGEROUS FOR INDIA

The number of people impacted by "disaster" events in Asia in 2023 was lower than that in 2022. That's the only mitigating finding of the World Meteorological Organisation's State of the Climate Asia report for the last year — the hottest since global temperature records began to be recorded. Asia faced the most disasters in the world as 79 events associated with extreme weather, climate, and water-related hazards in 2023 affected over nine million people in the region, directly killing over 2,000 people. The findings for India are particularly sobering. Heatwaves, floods and landslides took a heavy toll on life in the country. The warnings issued by scientific studies for

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more than a decade and a half ring true — people living in coastal areas, mountainous regions, even the plains are all vulnerable to climate vagaries. It's heartening that the manifestos of the two major parties, Congress and BJP, devote sections to sustainability and green economy. However, the ravages caused by heat, rain and floods are yet to become campaign issues.

Like most climate literature, the report drives home the need to keep temperature rise to levels that help avert catastrophes. But it's also a warning to be prepared for receding glaciers, rising sea-levels and droughts. Most Asian countries do come together in global forums such as the UNFCCC, but time has come to develop mechanisms of cooperation that will enable people — and cities and towns — to be resilient against climate change. Natural phenomenon rarely respects national boundaries. And, large parts of Asia, especially South Asia, have ecological continuities that make the case for joint work on building defences compelling. The Climate Asia report too should hasten such collaboration. "Precipitation was below normal in the Himalayas and in the Hindu Kush mountain ranges in Pakistan and Afghanistan in 2023, while southwest China suffered from a drought, with below-normal precipitation levels in nearly every month of the year," it points out.

Asia also has energy security-related demands. India and China have made remarkable strides in renewable power, but the two countries have concerns. In 2023, drought constricted China's energy options and a dry spell in the monsoon season forced India to step up the use of coal after reduced hydroelectricity output threatened power outages. Historical conflict has made energy diplomacy a high-hanging fruit for the two countries. The Subcontinent, too, is not close to a collaboration mechanism akin to the ASEAN. As the climate crisis deepens, countries in the region will need to iron out such complications.

EXPLAINED: WHAT DO COUNTRIES AND COMPANIES WANT IN GLOBAL PLASTIC TREATY TALKS?

Global leaders will gather in Canada's capital this week to discuss progress in drafting a first-ever global treaty to rein in soaring plastic pollution by the end of the year.

The hoped-for treaty, due to be agreed at the end of this year, could be the most significant deal relating to climate-warming emissions and environmental protection since the 2015 Paris Agreement, which got 195 parties to agree to keep global temperatures from rising beyond 1.5C.

But negotiators have a tough task in Ottawa, with countries divided over how ambitious the treaty should be.

"It's a crucial moment of this process," Andres Gomez Carrion, chair of the negotiations, told Reuters. "One of the biggest challenges is to define where the plastics lifecycle starts and define what sustainable production and consumption is."

WHY ARE WE HAVING PLASTIC TREATY TALKS?

At the U.N. Environmental Assembly in 2022, the world's nations agreed to develop a legally binding agreement by the end of 2024 to address the world's plastic pollution crisis.

The treaty is meant to address plastics through their entire lifecycle – from when they are produced, to how they are used and then disposed of.



WHAT'S THE PROBLEM WITH PLASTICS?

While plastic waste has become a global menace polluting landscapes and waterways, producing plastics involves releasing greenhouse gas emissions. The plastic industry now accounts for 5% of global carbon emissions, which could grow to 20% by 2050 if current trends continue, said a report last week from the U.S. federal Lawrence Berkeley National Laboratory.

Plastic production is on track to triple by 2060 – unless the treaty sets production limits, as some have proposed. Most virgin plastic is derived from petroleum.

WHAT IS THE CHALLENGE IN OTTAWA?

This week's talks are set to be the biggest yet, with some 3,500 people registered to attend including lobbyists, business leaders, lawmakers, scientists and environmental non-profits.

But countries have become divided on the issues during three previous rounds of talks – held in Punta del Este, Uruguay, Paris and most recently in Nairobi.

At the Nairobi talks in November, the draft treaty under review ballooned from 30 pages to 70 as some countries insisted on including their objections to more ambitious measures like production limits and phase-outs.

Countries are now under pressure to find common ground before the final negotiations are held in December in Busan, South Korea.

WHAT DO COUNTRIES WANT IN THE TREATY?

Many plastic and petrochemical-producing countries including Saudi Arabia, Iran and China – known collectively as the group of Like-Minded Countries – have opposed mentioning production limits. They blocked other countries from formally working on proposed treaty language calling for production caps, chemical disclosures or reduction schedules after last year's Nairobi session.

Meanwhile, the 60-nation "High-Ambition Coalition", which includes EU countries, island nations and Japan, wants to end plastic pollution by 2040.

Backed by some environment groups, this coalition has called for common, legally binding provisions to "restrain and reduce the production and consumption of primary plastic polymers to sustainable levels." They also are proposing measures such as phasing out "problematic" single-use plastics and banning certain chemical additives that could carry health risks.

The U.S. says it also wants to end plastic pollution by 2040. But unlike the High-Ambition Coalition, it wants countries to set their own plans for doing so, and to detail those plans in pledges sent regularly to the United Nations.

WHAT DOES THE PETROCHEMICAL INDUSTRY WANT?

The trade group Global Partners for Plastics Circularity represents major petrochemical producers including members of the American Chemistry Council and Plastics Europe. The group argues that production caps would lead to higher prices for consumers, and that the treaty should address plastics only after they are made.



These companies want to focus on encouraging the reuse or recycling of plastics, including deploying technology that can turn plastic into fuel, though a previous Reuters investigation found enormous obstacles in this method.

In terms of transparency about chemicals used in production, the group says companies should be allowed to disclose those chemicals voluntarily.

WHAT DO CORPORATE BRANDS WANT?

More than 200 consumer-facing companies including Unilever, PepsiCo and Walmart have joined the so-called Business Coalition for a Plastics Treaty.

Like the petrochemical industry, these companies that rely on plastic packaging for their products have been a major presence in the plastics negotiations. But they support a treaty that includes production caps, use “restrictions and phase-outs, reuse policies, product design requirements, extended producer responsibility, and waste management,” according to a statement ahead of the Ottawa talks.

FOURTH GLOBAL MASS CORAL BLEACHING TRIGGERED: WHAT ARE CORALS AND WHY ARE THEY IMPORTANT?

The fourth global mass coral bleaching event has been triggered by extraordinary ocean temperatures, the US National Oceanic and Atmospheric Administration (NOAA) said on Monday (April 15). This could have serious consequences for ocean life and millions of people who rely on reefs for food, jobs, and coastal defence.

Since mid-March 2023, the average sea surface temperature (SST) has been abnormally high. In March this year, it reached a record monthly high of 21.07 degree Celsius, according to the EU Copernicus Climate Change Service (C3S). The primary reason behind the soaring temperatures is the rising emissions of heat-trapping greenhouse gases (GHGs) such as carbon dioxide and methane in the atmosphere. Nearly 90% of the extra heat trapped by GHGs has been absorbed by the oceans — that is why they have become so warm.

Here is a look at why corals are important, what coral bleaching is, where it is taking place, and what can be its implication.

But first, what are corals and coral reefs?

Corals are essentially animals, which are sessile, meaning they permanently attach themselves to the ocean floor. They use their tiny tentacle-like hands to catch food from the water and sweep into their mouth. Each individual coral animal is known as a polyp and it lives in groups of hundreds to thousands of genetically identical polyps that form a ‘colony’.

Corals are largely classified as either hard coral or soft coral. It is the hard corals that are the architects of coral reefs — complex three-dimensional structures built up over thousands of years. “Unlike soft corals, hard corals have stony skeletons made out of limestone that are produced by coral polyps. When polyps die, their skeletons are left behind and used as foundations for new polyps,” according to NOAA.

Coral reefs, also referred to as “rainforests of the sea”, have existed on the Earth for nearly 450 million years. Australia’s Great Barrier Reef is the largest in the world, stretching across 2,028 kilometres.



What is the significance of corals?

Coral reefs have a crucial role in marine ecosystems. Thousands of marine species can be found living on one reef. For instance, “the Great Barrier Reef contains over 400 coral species, 1,500 fish species, 4,000 mollusc species and six of the world’s seven sea turtle species”, according to a report by the Natural History Museum. Research has shown that there could be millions of undiscovered species of organisms living in and around reefs.

These massive structures also provide economic goods and services worth about \$375 billion each year. More than 500 million people across the world depend on coral reefs for food, income and coastal protection from storms and floods. Coral reefs can absorb up to 97% of the energy from waves, storms, and floods, which prevents loss of life, property damage, and soil erosion. Therefore, the absence of coral reefs would not only result in severe ramifications for marine life but also for humans.

What is coral bleaching?

Most corals contain algae called zooxanthellae — they are plant-like organisms — in their tissues. Corals and zooxanthellae have a symbiotic relationship. While corals provide zooxanthellae a safe place to live, zooxanthellae provide oxygen and organic products of photosynthesis that help corals to grow and thrive. Zooxanthellae also give bright and unique colours to corals.

Corals are very sensitive to light and temperature and even a small change in their living conditions can stress them. When stressed, they expel zooxanthellae and turn entirely white. This is called coral bleaching.

Coral bleaching doesn’t immediately lead to the death of corals. They rather go under more stress and are subject to mortality. Coral bleaching reduces the reproductivity of corals and makes them more vulnerable to fatal diseases. If the bleaching is not too severe, corals have been known to recover.

Global mass bleaching of coral reefs is when significant coral bleaching is confirmed in the Atlantic, Indian and Pacific oceans, according to a report published by The Conversation. Such events are a relatively new phenomenon. The first one took place in 1998 in which 20% of the world’s reef areas suffered bleaching-level heat stress. The next two global bleaching events occurred in 2010 (35% of reefs affected) and between 2014 and 2017 (56% of reefs affected).

What is happening right now?

NOAA has confirmed that the fourth global bleaching event is currently underway. Nearly 54 countries, territories and local economies — from Florida, the US, Saudi Arabia to Fiji — have confirmed bleaching, according to a report by The New York Times. The Great Barrier Reef is witnessing its most severe bleaching event. “About a third of the reefs surveyed by air showed prevalence of very high or extreme bleaching, and at least three quarters showed some bleaching,” the NYT report said.

On Monday (April 15), bleaching was also confirmed in the Western Indian Ocean, including Tanzania, Kenya, Mauritius, Seychelles, and off the western coast of Indonesia.

In total, more than 54% of the world’s coral area has experienced bleaching-level heat stress in the past year, and that number is increasing by about 1% per week, Derek Manzello, the coordinator of NOAA’s Coral Reef Watch program, told the NYT.



The key driver behind the current event is higher ocean temperatures. However, the situation has been exacerbated by El Niño, a weather pattern which is associated with warmer oceans. Given that El Niño is weakening and a cooler La Niña may set in by the end of the year, the event may not last for very long.

What can be the impact of the event?

As the global mass bleaching event is still unfolding, its full impact will not be known for a while. Nonetheless, scientists have said the event is the most severe yet.

“I do get depressed sometimes because the feeling is like, ‘My God, this is happening’ ... Now we’re at the point where we’re in the disaster movie,” Ove Hoegh-Guldberg, a professor of marine studies at the University of Queensland, told the NYT.

With global temperatures soaring, such events are expected to become more frequent and longer. As a result, the world may lose the vast majority of its coral reefs at 1.5 degree Celsius of warming, and virtually all at 2 degree, according to a 2018 report by the Intergovernmental Panel on Climate Change (IPCC) — a United Nations body which assesses the science related to climate change. Currently, the average global temperature of the Earth has increased by at least 1.1 degree Celsius since 1850.

To curb global warming to no more than 1.5 degree Celsius, countries need to bring GHG emissions to a net zero by 2050, according to the Paris Agreement. The goal, however, is unlikely to be achieved as record levels of GHG emissions have continued to be emitted into the atmosphere.

WHAT IS LLAMA 3, META’S MOST SOPHISTICATED AND CAPABLE LARGE LANGUAGE MODEL YET?

Meta on Thursday (April 18) introduced its most capable Large Language Model (LLM), the Meta Llama 3. The company also introduced an image generator, which updates pictures in real-time even as the user types out the prompt. Meta will be integrating its latest model into its proprietary virtual assistant — Meta AI.

Meta is pitching its latest models as the most sophisticated AI models, steering way ahead of its peers such as Google, Mistral, etc., in terms of performance and capabilities. The updated Meta AI assistant will be integrated into Facebook, Instagram, WhatsApp, Messenger, and a standalone website much like OpenAI’s ChatGPT.

Here we take a look at what exactly Meta’s Llama 3 model is, and how it is different, and why Meta claims it to be its most capable model yet.

What is Llama 3?

Llama or Large Language Model Meta AI is a family of LLMs introduced by Meta AI in February 2023. The first version of the model was released in four sizes — 7B, 13B, 33B, and 65 billion parameters. Reportedly, the 13B model of Llama outperformed OpenAI’s GPT-3 which had 135 billion parameters.

To simplify, parameters here are a measure of the size and complexity of an AI model and generally, a larger number of parameters means an AI model is more complex and powerful. Meta released Llama 2 in July last year, a significantly upgraded version of its first LLM. Llama 2 was



released in 7B, 13B, and 70B parameters and it was trained on 40 per cent more data when compared to its predecessor.

Now, Meta is back with Llama 3, the latest iteration of its LLM which is claimed to be the most sophisticated model with significant progress in terms of performance and AI capabilities. Llama 3, which is based on the Llama 2 architecture, has been released in two sizes, 8B and 70B parameters. Both sizes come with a base model and an instruction-tuned version that has been designed to augment performance in specific tasks. Reportedly, the instruction-tuned version is meant for powering AI chatbots that are meant to hold conversations with users.

According to Meta, with Llama 3, the company has built the best open-source models that are on par with the best proprietary models available today. It has also embraced an open-source ethos of releasing early and enabling the dev community — a community of software engineers — to get access to the models while they are still in development. For now, Meta has released text-based models in the Llama 3 collection of models. However, the company has plans to make Llama 3 multilingual and multimodal, accept longer context, all while continuing to improve performance across LLM abilities such as coding and reasoning.

All models of Llama 3 support context lengths of 8,000 tokens. This allows for more interactions, and complex input handling compared to Llama 2 or 1. More tokens here mean more content input or prompts from users and more content as a response from the model. When it comes to safety, Meta has said that it is dedicated to developing Llama 3 in a responsible way. “We’re offering various resources to help others use it responsibly as well. This includes introducing new trust and safety tools with Llama Guard 2, Code Shield, and CyberSec Eval 2,” the company said in its blog.

How good is Llama 3?

Meta claims that the 8B and 70B parameter Llama 3 models are a giant leap from Llama 2. This is possible owing to the improvements in pretraining and post-training. “Our pretrained and instruction-fine-tuned models are the best models existing today at the 8B and 70B parameter scale,” the company said on its website. According to the company, the post-training processes have led to greatly improved capabilities like reasoning, code generation, and instruction following making Llama 3 more steerable.

Meta claims that in benchmark evaluations, Llama 3 8B surpassed other open-source AIs like Mistral 7B and Gemma 7B. Llama 3 outperformed Google’s Gemma 7B and Mistral’s Mistral 7B, Anthropic’s Claude 3 Sonnet in benchmarks such as MMLU 5-shot (Massive Multitask Language Understanding), GPQA 0-shot (A Graduate-Level Google-Proof Q&A Benchmark), HumanEval 0-shot (a benchmark for evaluating the multilingual ability of code generative models), GSM-8K 8-shot and Math 4-shot, CoT (maths and word problems).

Although Meta has not officially stated the use cases of Llama 3. Considering that it is similar to existing AI chatbots, Llama 3 can be used to create different forms of texts such as poems, code, scripts, and musical pieces. It can summarise factual topics and can also be used to translate languages.

How to try Llama 3

Meta said that it has integrated Llama 3 into Meta AI which can be used on Facebook, Instagram, WhatsApp, Messenger, and the web. It is readily available for developers as Meta has integrated



the LLM into the Hugging Face ecosystem. It is also available via Perplexity Labs, Fireworks AI, and on cloud provider platforms such as Azure ML and Vertex AI.

Llama 3 models will soon be available on AWS, Google Cloud, Hugging Face, Databricks, Kaggle, IBM WatsonX, Microsoft Azure, NVIDIA NIM, Snowflake, etc.

At present, Meta AI is available in English across the US on WhatsApp. Meta is also expanding to more countries including Australia, Canada, Ghana, Jamaica, Malawi, New Zealand, Nigeria, Pakistan, Singapore, South Africa, Uganda, Zimbabwe, and Zambia.

AGE IS JUST A NUMBER — A STUDY MAY HELP MAKE THE ARGUMENT

A minor annoyance often mars birthdays that mark milestones — 30, 40, 50 years on the planet. Friends and family try to console the centre of attention with phrases like “30 is the new 20” or “age is just a number” and worse still, as the birthday person nurses a hangover, “you are as old as you feel”. As it turns out, these trite remarks may be right and the perception of when old age begins is as far more malleable than the measure of mortality known as a calendar. A study published in the journal *Psychology and Aging* titled ‘Postponing old age: Evidence for historical change toward a later perceived onset of old age’ has found that over time, the threshold for being considered “old” has moved forward. In addition, the older people get, the farther away they think old age is.

One (awfully cynical) way of looking at these changing goalposts is that people are either in denial or vain or both. In cultures — most of them, in fact, in the age of social media — that fetishise youth and confuse it with vigour and beauty, this is probably a major factor. But there’s also the more understanding and human explanation. To a teenager, a 40-year-old is over the hill. But when she reaches that age, if well-being and health are not an issue, the fourth decade may well be a peak. In fact, people feeling young for longer is something to be welcomed. For better or worse — for all the talk of “golden years” — old age is associated with ends rather than beginnings.

The problem perhaps, is with beginnings. Several research papers over the last decade have shown that young people are going through an extended adolescence. More gig work, increasingly expensive housing and less social security mean that the independence associated with being an adult is now coming much later. So, if people aren’t grown up till their middle age, why shouldn’t they be old later?

A CASE FOR FORGETFULNESS

Phones, wallets, sunglasses, keys. A box of cornflakes, even a ukulele and, once, a gate valve. These are among the things that passengers have forgotten in cabs in 2023, according to Uber India’s annual ‘Lost and Found Index’. Further insights suggest that Delhi is the most forgetful city in India, that people are most prone to absentmindedness in the evening — from 7 pm to 9 pm — and that the festive days around Diwali tend to make people more distracted than any other time of the year. No doubt this information is amusing, and even useful — one could, for example, learn to be vigilant about one’s belongings during the weary, post-work cab ride home. But the real lesson here is that forgetfulness is inevitable.

In *Remember: The Science of Memory and the Art of Forgetting*, the American neuroscientist Lisa Genova explains that “a finely orchestrated balancing act between data storage and data disposal” is key to a well-functioning memory system. In other words, as much as remembering — to turn



off the gas, your child's smile when you return from work or that the deadline for filing tax returns is close — is necessary, so is forgetting — your score in Class X boards, the heartbreak of an early love or the time a colleague slighted you. In their own way, both help maintain sanity in an often overwhelming world. Consider the condition of the titular character in Jorge Luis Borges's story 'Funes the Memorious' whose prodigious memory forced him to note the progress of decay, corruption, fatigue and death and doomed him to be "the solitary and lucid spectator of...an intolerably precise world".

It is, of course, annoying — not to mention inconvenient and even expensive — to forget one's keys or phone in the back of a taxi. But if living a happy, full life means having a fallible memory, that's not too steep a price to pay.

BEER WITH HIM: LESSONS FROM A HUMAN BREWERY

From Dionysus to Jesus, turning water into wine has been a hallmark of divinity. For mere mortals, though, achieving a similar feat is the result of a disease, and can become the source of quite a few problems. Just take the case of the Belgian brewery worker, who earlier this week, made global headlines for being acquitted of a drunk driving charge. As it turns out, he wasn't getting high on the beer he made at work — in fact, he didn't drink at all. It was a rare case of immaculate intoxication. Those suffering from auto-brewery syndrome (ABS) can, in essence, make beer in their bellies without assistance.

In the case from Belgium, the victim was charged with driving intoxicated several times before he was diagnosed. He did not know that he was taking his work home with him, that the rare combination microbes in his digestive system were doing what so many artisanal beer-makers from Brussels to Bengaluru are constantly striving to: Creating a rare, unique ale. Unfortunately, there is neither commercial advantage nor divine benefit to ABS. Quite the opposite. Getting into the driver's seat believing you're sober is more than a little dangerous, and displaying all the symptoms of inebriation will only have loved ones suspect the victim — as was the case in 2019 with a ABS sufferer whose wife recorded him secretly, thinking he had fallen off the wagon.

There are perhaps some lessons to be drawn from the immaculate intoxication. It's always good to suspend judgement: The drunk stumbling across the street might just be suffering from a disease. And there is always a danger that people will see a person only from the prism of what they do: A brewer may always be suspected of having one too many of his creations.

BOOKER PRIZE NAME CHANGE: NOT A SIMPLE RACISM STORY

The Booker Prize, one of the most prestigious awards in the literary world, has recently come under fire for the historical links to slavery of its original sponsor, Booker Group.

Last week, BBC Radio host Richie Brave posted on X about a page on the Booker website which said that in the early 1800s, the company founders — brothers George and Josias Booker — "managed nearly 200 enslaved people".

— The Booker Prize was founded in 1969, initially just for writers from the Commonwealth, but later opened to writers globally. Each year, the prize is awarded to a single work of fiction in the English language. In 2004, a separate International Booker Prize was instituted for translated works.



— In 1815, the Congress of Vienna divided the northeastern coast of South America among three European Powers. The Dutch got modern-day Suriname, France got French Guiana (still a French overseas territory), and Britain got what is now known as Guyana.

— Scores of entrepreneurial European men — like the Booker brothers — headed to these colonies to make a quick fortune.

— The economy of British Guyana was largely driven by the sugar and (to a lesser degree) cotton industries, with African slaves providing the necessary labour in plantations. The Booker brothers were very much a part of this exploitative slave-based economy.

— When slavery was abolished in Guyana in 1834, the Booker brothers received compensation from the state for 52 emancipated slaves.

— After slavery was abolished in Guyana, the Bookers decided to replace it with indentured labourers from India. This system lasted until about the 1920s. Today, the people of Indian origin constitute the largest ethnic group in Guyana.

THE FIZZ IN THE SHAVING CREAM

Q. How do they get all that shaving cream into an aerosol can?

A: Shaving cream is basically soap and water. It is put into a can along with compressed butane gas. Without the gas, all you have is soapy liquid.

When the valve is pressed, some of the gas mixes with the soap and water, escapes, and expands to make foam.

The filling process is like the process used to fill air in the tube of a tyre, or even a balloon.

As long as the pressure is maintained in a closed system and the gas from a pressurised source is not allowed to escape, it takes up a very small amount of space.

The fact that any pressurised gas expands when the pressure is released means that a small quantity of soap and water can make a whole lot of foamy bubbles.

GLYCEMIC INDEX OF DIETS: IMPORTANCE BEYOND DIABETES CONTROL

The concept of 'Glycemic Index' was first proposed by Prof. David Jenkins of the University of Toronto in 1981. The glycemic index (GI) of a food refers to the property of the food to increase the blood glucose level and is a measure of the 'quality' of carbohydrates. Glucose or white bread is used as the comparator. The GI of glucose is taken as 100 and the GI of other foods is given as a percentage of this. Thus, the GI of foods is classified as low GI (less than 55), medium GI (56- 69) and high GI (over 70). The GI multiplied by the amount of the carbohydrate consumed, determines the glycemic load (GL).

Many nutritionists strongly believe in the deleterious effect of consuming diets with high GI and conversely the beneficial effects of taking diets with low GI. There are others who believe that this is too simplistic an approach. Their argument is that carbohydrate is only one of the macronutrients of food and the quality of protein and fat are ignored if only GI is used to assess the quality of a diet.



Existing evidence

However, there is a lot of evidence to support the growing importance of the GI and GL of diets. The link between high GI and GL diets to the risk of type 2 diabetes has been established recently. However, what is less known is the association of high GI diets with cardiovascular disease and mortality.

Hence all attempts should be made to reduce the GI and GL of our diets. This could help, not only in the prevention and control of diabetes but also in reducing the incidence of cardiovascular disease which occurs at much younger ages in our country.

Examples of diets with low GI include brown rice, steel cut oats, legumes, pulses and beans, fruits like apple and guava, and vegetables like spinach, lettuce, brinjal, broccoli, tomatoes, paneer, soya, nuts and seeds.

Diets with high GI include sugar and sweets, white rice, Maida, potato, white bread, sweetened drinks, jaggery, cornflakes and cookies.

If diets with high GI, i.e., the 'bad' carbohydrates, are replaced with 'good' carbs which have low GI and this is combined with adequate physical activity (exercise), it could help to curb the growing incidence of premature cardiovascular disease in India.

WHY ARE SUGARY PROCESSED FOODS HARMFUL?

The story so far:

Over the past week, the spotlight has returned on high sugar content in flavoured malt-based milk powders and baby food. Government authorities are warning against branding such items as "healthy" and have called out the allegedly misleading promotion and marketing tactics while loading products with added sugar.

Why is it problematic to label malt-based, sugary milk products as 'health' drinks?

On analysing the product in question, (a drink like Bournvita, for example,) it is observed that it contains 86.7g of carbohydrates per 100g, of which 49.8g is sugar content. Of the total sugars, 37.4g is sucrose or added sugar. For every recommended per serve of 20g chocolate powder, the consumer is downing nearly 10g of total sugar. "Apart from added sugar, the process of malting, which involves germinating cereals, drying, roasting and powdering them, also produces sugar. Malting was a process originally used to produce single malt whiskey, and is also used in making malt-based milk beverages," a scientific panel member of the Food Standards and Safety Authority of India (FSSAI) told The Hindu. Once you germinate a grain, the starch in the grain breaks down to sugar by the action of a group of enzymes called amylase. When you roast it, it develops a nice flavour as that sugar gets caramelised. "Maltose is nothing but two units of glucose, a form of sugar, bonded together. Apart from added sugar, the chocolate powder contains maltodextrin, liquid glucose, maltose generated from malting process of cereals and so on," the member said.

What is FSSAI's stand on sugar content?

In its Food Safety and Standards (Advertising and Claims) Regulations 2018, the FSSAI said that only if total sugar is less than 5g per 100g in a product, it can claim to be 'low on sugar.' Any product which is 'low on sugar,' can potentially be 'healthy.' But when products do not fulfil this requirement, and still advertise or market their products as 'health drinks,' it is problematic, the



FSSAI scientific panel member added. “This is because if a child, for instance, takes four servings of this so-called drink, he or she will end up consuming 40 grams of sugar, which is higher than the World Health Organization’s advised threshold of consuming 25 grams or six teaspoons of sugar per day. In Indian households, one often adds extra teaspoons of sugar to a chocolate-powder drink too,” the member added.

What is the controversy over baby food?

A closer look at the ingredients of Wheat Apple Cherry baby cereal for kids from eight months up to 24 months marketed by Nestlé under the brand name Cerelac in India reveals that it contains 24 grams per 100 grams of total sugars derived from milk solids, maltodextrin, dextrose and so on. For a one to two year old child, the company recommends feeding twelve scoops or 100 grams of baby food every day. This means the baby consumes 24 grams of sugar each day. This is a harmful practice, say experts. “A baby is only familiar with the taste of breast milk. Lactose, which is a naturally occurring form of sugar, is less sweet. When a child is shifted from breast milk to complementary foods, extra sugar is being fed. Extra sugar in a young baby’s diet creates unnecessary pressure on the baby’s pancreas, leading to production of excess insulin which may lead to diabetes and obesity in future,” the member said. Addition of ingredients like maltodextrin to improve flavour and texture is harmful as the white starchy powder of maltodextrin has a higher glycemic index (GI) than table sugar. GI is a measure of how quickly a food causes blood sugar to rise. The member further added that excess sugar gets converted into triglycerides, a form of fat which gets stored in liver leading to fatty liver and insulin resistance that causes diabetes.

An estimated 101.3 million people in India could be diabetic, a study co-published by the Indian Council of Medical Research stated.

Will an FSSAI probe be enough to curb the practice of misleading labels?

In September 2022, the FSSAI put out a draft notification which stated that high fat, sugar, salt (HFSS) food means a processed food product which has high levels of saturated fat or total sugar or sodium.

The draft notification was released to explain what a HFSS food would consist of and how to warn consumers against it on front-of-the-pack labelling of the food packet or beverage bottle. It implied that if a product derives more than 10% of total energy (kcal) from sugar and/or saturated fat, then the product was high on fat and/or sugar.

However, the FSSAI has kept the regulation open-ended on whether companies need to declare fat, sugar and salt content on the front of the pack or not. It has also batted for ‘health rating stars,’ and not warning labels.

“Warning labels are upfront and inform the consumers if a product is high on fat, salt or sugar. Health stars can be misleading. A consumer does not have the time or knowledge to calculate if a product is high on sugar, based on the FSSAI’s definition,” said Dr. Arun Gupta, Convener of the Nutrition Advocacy in Public Interest (NAPi) and former member of the PM’s Council on India’s Nutrition Challenges.

What is the way forward?

According to Food Safety and Standards (Foods for Infant Nutrition) Regulations, 2019, sugar is allowed in milk cereal-based complementary food, Dr. Gupta points out. The regulation says that

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR



lactose and glucose polymers shall be preferred carbohydrates for food and infant nutrition. Sucrose and/or fructose shall not be added, unless needed as a carbohydrate source, and provided the sum of these does not exceed 20% of total carbohydrate. “The regulation permits sugar, hence the regulation needs to be re-looked,” he says.

Hence, the first step, Dr. Gupta explains, would be to bring about a comprehensive regulation to clearly define what is ‘healthy,’ and ‘unhealthy,’ which encompasses all beverages and food products. “There is a draft notification on front of pack labelling and high fat, sugar, salt foods which has received comments from all stake holders and after that has been put in cold storage,” Dr. Gupta says. The underlying problem is marketing and pushing it to unsuspecting consumers.

A Hindustan Unilever Limited annual report of 2022 states that the company partnered with the Zilla Parishad of Pune in the midday meal programme to add Horlicks, cited as a ‘health food drink,’ to existing take-home rations, which were planned to be provided to children across 4,600 anganwadi centres covering 1.45 lakh children aged between three and six.

Also, under the Infant Milk Substitutes Act, infant foods cannot be promoted via advertisements. However, rules are flouted, and social media influencers often promote baby food, Dr. Gupta says. “Strong action needs to be taken against illegal ads,” he adds.

POWERFUL ANTIDOTE TO TOXINS IN COBRA, KRAIT VENOMS DEVELOPED

For some people, snakes are exotic yet dangerous creatures of the wild; eerie but elusive, and not something to worry about in day-to-day life. For others, especially some farmers in India and Africa, they are a constant and terrifying threat to life.

Venom from snake bites leads to more than 100,000 deaths every year, with around 400,000 people left permanently disabled. The mortality burden is especially higher in low and middle-income countries in Africa and Asia, with India alone at a staggering average of 58,000 deaths in a year according to a 2020 report. However, considered a “poor man’s disease”, relatively less attention has been paid to the devastation caused by the bites. In some of these countries, snakebite incidence is distressingly high but inadequate access to proper healthcare prevents fast and efficient treatment, leading to disproportionately more deaths.

Things were set to improve in 2017 when the World Health Organization (WHO) finally stepped in to alert the world about one of its biggest hidden health crises. It officially classified snakebite envenoming as a highest priority neglected tropical disease.

Animals in the middle

A major issue is that the current process of producing antivenom is outdated: it involves injecting large animals like horses with snake venom and collecting the animals’ blood for the antibodies it produces against the venom.

But the horses’ blood could contain antibodies against other microorganisms as well, even against other components of the venom that are not harmful to humans. So only a fraction of the antibodies in the antivenoms is useful to humans, leading to more variability and the need for larger doses.

In addition, because these antibodies are produced in another animal, the chances of humans developing an adverse or allergic reaction to these antivenoms are also higher.



A variety of venoms

Driven by these concerns, a group of scientists — part of a consortium funded by the Wellcome Trust — decided to sidestep animals and use human antibodies instead. Using a type of toxin found in many kinds of snakes, they synthetically developed a broadly applicable human antibody against the toxin. Their results were recently published in the journal *Science Translational Medicine*.

“Venoms of snakes in India are so diverse that venoms of the same species across regions can’t be neutralised by the same antivenom,” Kartik Sunagar, head of the Evolutionary Venomics lab at the Indian Institute of Science, Bengaluru, and one of the lead authors of the study, said.

“Even in the same geographical location, if you look at individuals of the same species, antivenom can only neutralise some venoms and not others. There is a stark variation in venoms, so that’s why we wanted to figure out a solution that might work across regions and across species.”

Screening billions of antibodies

The scientists focused on three-finger toxins (3FTxs) — one of the most abundant and lethal ingredients in elapid venoms. Elapids are a major medically relevant family of snakes that include cobras, kraits, and mambas.

The scientists narrowed their focus on α -neurotoxins, a specific class of 3FTxs that target receptors in human nerve and muscle cells. These toxins prevent the receptors from responding to acetylcholine, a neurotransmitter involved in carrying messages from the neurons to the muscles, leading to paralysis, an inability to breathe, and eventually death.

Joseph Jardine, an antibody expert at Scripps Research Institute, in California, led the initial work of “finding the needle in the haystack” — i.e. finding the best antibody that could target the toxins among the billions of human antibodies available.

The scientists first synthesised variants of their toxin of interest, called long-chain 3FTxs (3FTx-L, a type of three-finger α -neurotoxins), in the lab. They then screened billions of human antibodies expressed on the surface of yeast cells for ones that bound best to the toxins in their study. This selection of antibodies far exceeds any number of antibodies that an animal’s immune system could cook up in response to a venom. After multiple rounds, they had a shortlist of antibodies that broadly reacted with most of the 3FTx variants they used.

All but king cobra

Nicholas Casewell’s group at the Liverpool School for Tropical Medicine in the U.K. then tested the antibodies in vitro in human cells, to see which of them could best neutralise the toxins. This step brought them to an antibody they dubbed 95Mat5.

Finally, Dr. Sunagar’s group tested 95Mat5 in vivo in mice, to see if this broadly neutralising antibody could help protect against lethal doses of α -bungarotoxin, the 3FTx-L in the highly venomous many-banded kraits. They also injected mice with whole venom from king cobras, black mambas, and monocled cobras — all different elapid snakes from Asia and Africa with venom containing 3FTx-L variants — and tested to check how their antibody worked against them.



They found 95Mat5 worked well against all the snake venoms, protecting the mice from death, with the only exception being the king cobras' venom, where the antibody delayed but could not prevent death.

"We were surprised by the results of the black mamba, where the 3FTx-L is only 17% of the total venom composition. By knocking out that one toxin, we were able to protect mice fully from the other toxins in the venom in what may be a synergistic effect," said Irene Khalek, a scientist at Scripps Research Institute and one of the authors of the study.

An 'impossible' find

"The study is really well-performed, and I would expect that the antibody could be used as an important component in future antivenoms against mambas and cobras in Africa and Asia," Andreas Hougaard Laustsen-Kiel, head of the Tropical Pharmacology Lab at the Technical University of Denmark, said.

Dr. Laustsen-Kiel was involved in a different study, published in Nature Communications last year, where a group of scientists discovered a similar broadly neutralising antibody against long-chain -neurotoxins from snakes. "Because snake venoms are so complex, I would have thought it impossible to make an antibody that could knockout the whole venom," Dr. Sunagar said.

Closer to a universal solution

In the current study, the scientists found one reason why their antibody worked so well against their toxins of interest: the crystal structures of their antibody 95Mat5 and 3FTx-L variants revealed that the antibody bound the toxin exactly where the toxin would have bound its target receptor in human nerve and muscle cells. By mimicking the receptor-toxin interaction, the antibody could whisk the toxins away from the receptors and prevent them from exerting their deadly effects.

The current antibody works well against a specific kind of toxin present in the venom of many dangerous snakes, but it is also a small first step towards a universal antivenom.

The scientists said they are keen on discovering specific antibodies like these against toxins in other snake venoms as well, like in vipers. "We need to discover antibodies for a couple of other toxins, then we can have a universal solution for the majority of snakes in the world," Dr. Sunagar said.

ANTIHISTAMINE: A PILL FOR YOUR SNEEZE?

WHAT IS IT?

Chances are you've taken an antihistamine this week. Antihistamines are common drugs that can be purchased without a prescription and are used to treat short-lived allergic reactions, like a sneezing fit or an itch.

As the name suggests, an antihistamine drug acts against the activity of the histamine receptor — proteins that bind to a compound in the body called histamine. This compound consists of two attached to each other: ethylamine ($\text{CH}_3\text{CH}_2\text{NH}_2$) and imidazole ($\text{C}_2\text{N}_2\text{H}_4$), the latter being a ring.

Depending on its location, histamine performs broadly four types of functions, each involving different histamine receptors called H1, H2, H3, and H4. The H1 receptor is found mostly in the



inner surface of blood and lymphatic vessels, neurons, and smooth muscle cells. H1 antihistamines are used to block the effects of minor allergies.

Certain cells in the gastric glands release histamine, which encourage nearby parietal cells with H2 receptors to release gastric acid for digestion.

H3 receptors are located in cells in the central nervous system, where they use histamine to regulate the release of other neurotransmitters, including dopamine and serotonin. Similarly, H4 receptors use histamine to regulate the body's inflammatory response, including allergic reactions as well.

Currently, there is a lot of research ongoing on H3 and H4 receptors, in particular to alleviate the effects of neurological and immunological disorders, respectively, using specialised drugs.

WHAT DOES A VIRUS DO INSIDE THE BODY?

Most human viruses achieve this by ensuring they are present in bodily fluids that contact the outer environment, and subsequently, a new host.

Once inside the new host, a virus must be present at the correct location to infect new target cells. Viruses are usually highly selective in the cells they infect. This phenomenon, called tropism, occurs because most viruses have special proteins on their outer surface that make contact with a receptor on the host cell. Any cell-type that makes the receptor can be infected by the virus.

For example, the receptor for HIV is a protein called CD4. Only cells that make the CD4 protein, such as T-cells and macrophages, can be infected by HIV. Similarly, SARS-CoV-2 uses a receptor called ACE2. Cells of the respiratory tract and some cardiovascular cells all express ACE2, and are target cells for SARS-CoV-2. HIV can't infect respiratory cells, and SARS-CoV-2 can't infect T-cells or macrophages.

Viral transmission is an outcome of a chase inside the host: between the virus making copies of itself and the immune system trying to destroy the virus and infected cells. The virus must transmit before the immune system beats it or the host dies. One strategy viruses use to achieve this is by making proteins on the surface that have receptors on multiple cell-types. Such a strategy will allow them to infect different cell-types, allowing access to multiple body fluids, enabling faster transmission.

SKIN LIGHTENING CREAMS LADEN WITH MERCURY TAKE A TOLL ON THE KIDNEY

Researchers from Kerala have discovered a concerning link between the regular use of fairness creams and nephrotic syndrome, a kidney disorder. In a study published in *Kidney International*, they describe 15 cases of Membranous Nephropathy (MN) associated with the use of fairness creams containing high levels of mercury, a toxic heavy metal. These patients exhibited non-specific symptoms like fatigue and mild edema but had high proteinuria levels. Further investigation revealed that the creams contained mercury levels far above permissible limits. The study highlights the need for greater awareness about the health risks associated with toxic cosmetic products, particularly in regions where the obsession with fair skin is prevalent. Mercury, used in these creams to lighten skin tone, can lead to systemic toxicity and serious health issues, including kidney damage. Despite global efforts to regulate mercury in cosmetics, the sale of such products continues, underscoring the necessity for stricter regulations and public education on the dangers of mercury exposure.

3RD FLOOR AND 4TH FLOOR SHATABDI TOWER, SAKCHI, JAMSHEDPUR