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INTERNATIONAL

DEMOCRATIC DEPARTURE

With less than four months to go before the 2024 U.S. election and less than one month ahead of the Democratic Party's Convention, incumbent and expected nominee of his party, President Joe Biden (81), has quit the race and in doing so has endorsed his running mate, Vice-President Kamala Harris, for the presidential ticket. Mr. Biden's exit comes after months of Democrats calling for him to step down after public gaffes and fumbles, thought to be linked to his age. His withdrawal caught many, including some within the Democratic Party, off-guard, given that his campaign chair, Jen O'Malley Dillon, had said, "He's not going anywhere." This resolute stance is said to have baffled senior party lawmakers, who, especially after Mr. Biden's disastrous performance when he went toe-to-toe with Republican rival and former President Donald Trump, are said to have privately conveyed to the President that he ought to make way for a stronger candidate if the Democrats were to have a reasonable chance in the polls.

While the final tally of delegates at the Democratic Convention will determine which candidate ultimately wins the party's nomination for the election, the odds look increasingly strong for Ms. Harris to make history as the U.S.'s first ever Indian-origin and person(woman)-of-colour nominee for President, and the second woman, following Hillary Clinton's run against Mr. Trump in 2016. In terms of the factors favouring Ms. Harris, she is anyway next in line under the U.S. Constitution in terms of official succession; and she would likely gain access to close to \$100 million in campaign funds. On the flip side, she is a relatively less known figure nationally, and Republicans have been quick to label her the custodian of left-wing political values, such as her espousal of reproductive freedom in the face of the Supreme Court ruling against the constitutional right to abortion. Further, surveys suggest that public opinion places her approval at roughly the same level as Mr. Biden's and that would put her a few rungs below Mr. Trump. Nevertheless, the expected response from the Democratic quarter — if they wish to avoid the risky scenario of factional infighting at the Convention — would be for them to unite around Ms. Harris and her running mate — frontrunners include Michigan Governor Gretchen Whitmer, California Governor Gavin Newsom and Transportation Secretary Pete Buttigieg. Even in this best-case scenario for Democrats, the Republicans under Mr. Trump appear to be on a far firmer footing to win over independent voters in swing States, the key to overall victory in any U.S. presidential election.

SPECIAL RELATIONSHIP

On the eve of Prime Minister Benjamin Netanyahu's visit to Washington, the Israeli Defence Forces (IDF) issued a new evacuation order, asking Palestinians to leave several neighbourhoods of the southern Gaza city of Khan Younis, including areas that had earlier been designated as a humanitarian zone. When Mr. Netanyahu addressed a joint session of the U.S. Congress in Washington on Wednesday, more than 39,000 Palestinians, a vast majority of them women and children, had already been killed in Gaza by the IDF in less than 10 months. At least 90,000 Palestinians have been wounded and nearly the entire population of the enclave has been displaced, some of them several times. Dozens of journalists have been killed. Private charities, UN aid workers, hospitals, ambulances, and even tent camps of the displaced have been bombed. Gaza, besieged by the IDF, does not have enough food, water, or medicines. The UN, which has repeatedly tried to draw the world's attention to the suffering of Palestinians, now warns of epidemics. Two UN Security Council resolutions called for a ceasefire in Gaza. There have been two rulings from the International Court of Justice, which is hearing a case of genocide, against

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Israel's conduct of the war. None of this seems to bother the U.S. lawmakers, who applauded Mr. Netanyahu throughout his speech.

Without the U.S.'s political and military support, Mr. Netanyahu's government would not have been able to fight such a disastrous war, which was triggered by Hamas's attack on October 7, 2023, in Israel, killing 1,200 people. More than 100 people taken hostage on October 7 are still in Hamas's captivity, which Israel cites as the reason for the continuation of the war. But in the name of fighting Hamas, Israel has been punishing the entire Palestinian population in Gaza. Officials of the Biden administration have voiced concerns over civilian casualties. But besides the verbal protestations, Washington has done little to force Israel to act. Worse, the U.S. continues to provide military assistance to Israel. Yet, there are underlying tensions in the relationship. The protests in Washington while Mr. Netanyahu was speaking at Congress point to the growing public criticism of his war and America's support for it. The welcome Mr. Netanyahu received at Congress shows that he has the support of the elites. But the protest on the streets and the dissenting voices even among lawmakers suggest that the national consensus on Israel is eroding in the U.S.

WHAT HAS THE ICJ SAID ABOUT ISRAEL'S OCCUPATION OF WEST BANK AND EAST JERUSALEM?

The International Court of Justice (ICJ), the United Nations' principal judicial organ, said on July 19 that Israel's occupation of the West Bank and East Jerusalem violated international law, and its presence in Palestinian territories should come to an end "as soon as possible".

— Israel has occupied the West Bank and East Jerusalem since the Six-Day War in 1967. Prior to this, the territories were under Jordanian control.

— The most widely accepted definition of occupation comes from Article 42 of the "Hague Convention (IV) respecting the Laws and Customs of War on Land and its annex", 1907. It says that a "territory is considered occupied when it is actually placed under the authority of the hostile army." Importantly, an occupation must only be temporary, and cannot involve any transfer of sovereignty to the occupying power.

— Once a territory has been seized, the occupying power has certain obligations vis-à-vis persons within the occupied territory, as spelled out in the 1907 Hague regulations, and the Fourth Geneva Convention of 1949, which established international legal standards for humanitarian treatment in war. These obligations include providing food and medical care to the population of an occupied territory. They also prohibit civilian transfers of population in the territory, and the use of or threat of force.

— The ICJ said that Israel is under the obligation to immediately end its illegal occupation, cease new settlement activities and evacuate settlers from the occupied territories, and make reparation to all affected people for the damage caused.

— The court said that other states should not recognise the occupied territories as part of Israel, and refrain from providing aid or assistance to Israel in maintaining this occupation.

For Your Information:

— The ICJ, also known as the World Court, is a United Nations court that deals with disputes between states, while the ICC is a treaty-based criminal court focusing on individual criminal responsibility for war crimes.



— The 1949 Geneva Conventions are a set of international treaties that ensure that warring parties conduct themselves in a humane way with non-combatants such as civilians and medical personnel, as well as with combatants no longer actively engaged in fighting, such as prisoners of war, and wounded or sick soldiers. All countries are signatories to the Geneva Conventions.

CELEBRATIONS AND LAMENTATIONS COINCIDE 50 YRS AFTER CYPRUS'S ETHNIC SPLIT

Turkey's president on Saturday put a damper on hopes for a quick resumption of talks to heal a half-century of ethnic division on Cyprus, reaffirming his support for a two-state deal that Greek Cypriots dismiss as a non-starter.

— President Recep Tayyip Erdogan ruled out a peace deal based on a United Nations-endorsed plan for federation, speaking ahead of a military parade to mark the 50th anniversary of a Turkish invasion that split the island along ethnic lines.

— Although Erdogan has previously rejected the federation plan, Greece and the Greek Cypriots had hoped he would soften his position.

— The anniversary is a festive occasion for Turkish Cypriots in the island's northern third, who view the invasion as salvation from the Greek-speaking majority's domination. The invasion followed a coup that aimed at a union with Greece, which was backed by the junta then ruling in Athens.

— The EU, which Cyprus joined in 2004, urged both sides to show "genuine commitment" to a peace deal in line with U.N. resolutions.

For Your Information:

— Cyprus gained independence from Britain in 1960 after Greek and Turkish Cypriots reached an agreement on a constitution, but a standoff ensued after the first President, Archbishop Makarios, proposed certain amendments. The UN intervened and deployed a peacekeeping force. Turkish forces invaded in 1974, occupied the island's northern part and expelled a large number of Greek Cypriots; many others abandoned their homes and moved to the south.

— A Turkish Republic of Northern Cyprus — recognised only by Turkey — was declared in 1983. Many Turkish Cypriots emigrated to the north, settlers were allegedly brought in from the Turkish mainland, and the door for Greek Cypriots to return was almost entirely shut.

WHAT IS BEHIND RWANDA'S ELECTION OUTCOME?

The story so far:

On July 15, Rwanda held its fourth presidential election since the 1994 Tutsi genocide. Partial results released by Rwanda's National Electoral Commission (NEC) reveal overwhelming support for President Paul Kagame. With 79% of the votes counted, Kagame has secured over 99% of the votes. Opposition leaders Habineza Frank of the Democratic Green Party and Independent candidate Mpayimana Phillippe secured less than one per cent of the votes each.

How did Rwanda politically progress?

On 6 April, 1994, Rwanda's Hutu President Juvenal Habyarimana was killed in a plane crash, allegedly by the Tutsi-led armed group, the Rwandan Patriotic Front (RPF). Between April 7 and

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July 15, 1994, the state-sponsored Hutu armed group massacred over 800,000 Tutsis and moderate Hutus in revenge attacks.

In 1994, the RPF defeated Rwanda's government, ended the genocide and restored law and order. The RPF took control of Rwanda and established a transitional government of both Hutus and Tutsis, which ruled from 1994 to 1995. Between 1996 and 2002, Rwanda's leadership was preoccupied with fighting Hutu armed groups in the neighbouring Democratic Republic of Congo (DRC) and could not prioritise nation building.

In 2003, Rwanda adopted a new Constitution and became a semi-presidential republic. The same year, multi-party elections were held for the first time. Kagame was elected as Rwanda's President. Under his leadership, the RPF rapidly consolidated power, winning landslide majorities since 2003. In 2015, the government amended the constitution through a referendum, enabling Kagame to rule till 2034 and strengthening the RPF's dominance.

What has been the role of Kagame?

A U.S.-trained military officer of Tutsi ethnicity, Kagame joined the RPF in 1990. As the RPF's leader, Kagame led the armed group to end the genocide. Between 1994 and 2000, he was Rwanda's de facto leader, first as Vice President and then as Acting President.

According to Rwanda's Ministry of Finance and Economic Planning, the economy grew by over eight per cent annually under Kagame's leadership. Between 2000 and 2017, his targeted social welfare schemes lifted over one million people out of poverty, while life expectancy rose from 29 to 67 years. However, Western observers criticised his government as authoritarian for suppressing opposition forces and civil liberties. In 2024, Freedom House accused his government of surveillance, torture, arbitrary detentions, and assassinations of dissents.

What do the election results convey?

Kagame's victory conveys wide-ranging support for his programmes of economic progress and political stability. Given that Rwanda is still a developing country, Kagame's campaign resonated with the electorate's aspirations for economic freedom and reaffirmed his successful record of providing the stability needed for development.

Kagame's victory demonstrates the effectiveness of his party machinery, with opposition candidates struggling to draw crowds. However, Kagame was virtually unchallenged, with opposition candidates receiving one per cent of votes combined, reflecting the RPF's efforts to suppress genuine political competition. The suppression of the candidates also reflected Kagame's authoritarian tendencies. The pro-government decisions of the National Election Commission reflected the absence of robust democratic institutions.

Does the Rwanda election hold any significance for Africa's democratic process?

South Africa, Senegal, Chad, and Rwanda have completed their general elections, others are heading to the polls. While South Africa and Senegal had free and fair elections, polls in Chad and Rwanda saw incumbents controlling opposition forces.

While Rwanda enjoys an impressive developmental record, its authoritarian tendencies and democratic deficits reflect the larger African trends of democratic backsliding and electoral malpractices. Since the RPF was initially an armed group that became the country's ruling party, its political dominance reflects the persistent issue of militarisation of civilian politics that affects



African states like Gabon and Guinea. Kagame's victory will mark continued political stability, but its military involvement in the DRC will contribute to regional instability.

MILITARY LEADERS OF NIGER, MALI AND BURKINA FASO RULE OUT RETURNING TO THE ECOWAS REGIONAL BLOC

Military junta leaders of Niger, Mali and Burkina Faso on Saturday ruled out returning their nations to the West Africa regional bloc whose division could further jeopardize efforts to undo coups and curb violence spreading across the region.

The leaders of the three countries announced that position during their first summit in Niamey, the capital of Niger, after their withdrawal from the West Africa bloc known as ECOWAS in January.

They also accused the bloc of failing its mandate and pledged to consolidate their own union the Alliance of Sahel States created last year amid fractured relations with neighbors.

The nearly 50-year-old ECOWAS has become "a threat to our states," said Niger's military leader, Gen. Abdourahmane Tchiani. "We are going to create an AES of the peoples, instead of an ECOWAS whose directives and instructions are dictated to it by powers that are foreign to Africa," he said.

The meeting of the three countries that border one another came a day before an ECOWAS summit being held in Nigeria by other heads of state in the region.

Analysts said the two meetings show the deep division in ECOWAS, which had emerged as the top political authority for its 15 member states before the unprecedented decision of the three countries to withdraw their membership.

Despite efforts by ECOWAS to keep its house united, the alliance between the three military junta-led countries will most likely remain outside the regional bloc as tensions continue to grow, said Karim Manuel, an analyst for the Middle East and Africa with the Economist Intelligence Unit.

"Attempts at mediation will likely continue nonetheless, notably led by Senegal's new administration, but it will not be fruitful anytime soon," said Manuel.

Formed last September, the Alliance of Sahel States has been touted by the three junta-led countries as a tool to seek new partnerships with countries like Russia and cement their independence from former colonial ruler France, which they accuse of interfering with ECOWAS.

At the meeting in Niamey, Burkina Faso's leader, Capt. Ibrahim Traoré, reaffirmed those concerns and accused foreign countries of exploiting Africa. "Westerners consider that we belong to them and our wealth also belongs to them.

They think that they are the ones who must continue to tell us what is good for our states. This era is gone forever; our resources will remain for us and our populations," Traoré said. "The attack on one of us will be an attack on all the other members," said Mali's leader, Col. Assimi Goïta.

With Goïta elected as the new alliance's leader, the three leaders signed a pact in committing their countries to creating a regional parliament and a bank similar to those operated by ECOWAS. They also committed to pooling their military resources to fight insecurity in their countries.



At a meeting of regional ministers on Thursday, Omar Alieu Touray, the president of the ECOWAS Commission, said it had not received "the right signals" about any possible return of the three states despite ECOWAS lifting coup-related sanctions that the three nations blamed for their decision to quit the bloc. It is not only the three countries that are angry at ECOWAS, observers say.

The bloc has lost goodwill and support from West African citizens so much that some celebrated the recent spate of coups in the region where citizens have complained of not benefitting from rich natural resources in their countries.

For the most part, ECOWAS is seen as representing only the interests of its members' leaders and not that of the masses, said Oge Onubogu, director of the Africa Program at the Washington-based Wilson Center think tank.

WAR IN MYANMAR'S HEARTLAND SILENCES VOLCANO SHRINE

A shrine perched on an extinct volcano in Myanmar's Mandalay region, once thronged with the bustle of pilgrims praying to flower-eating spirit Popa Maedaw, has been cut off from the faithful following the civil war.

Now, the prayers have fallen silent at the Taung Kalat shrine, the plains around it a battle zone and the faithful mostly blocked from access by fighting and checkpoints manned by all sides in the conflict.

The Taung Kalat shrine honours Popa Maedaw, one of dozens of nats, or guardian spirits, that exist alongside Buddhism in Myanmar.

The plains surrounding Mount Popa are home to the Bamar ethnic majority and were largely untouched by decades of previous conflict between the military and minority armed groups in the remote jungles and hills. Now the region of rolling fields of sesame, pulses and beans — studded with the golden spires of Buddhist pagodas — is a battle zone

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NATION

IS IMMUNITY FOR THE PRESIDENT AND GOVERNORS ABSOLUTE?

The story so far:

A three-judge Bench headed by the Chief Justice of India D.Y. Chandrachud has impleaded the Union government and sought assistance from the Attorney General of India to decide if a “blanket” immunity granted under Article 361 to the President and Governors, while in office, from criminal proceedings undermines fairness, constitutional morality and violates fundamental rights to equal protection of the law and fair trial.

What is the case?

The question came up in a petition filed by a contractual woman employee with the Raj Bhavan who has accused West Bengal Governor C.V. Ananda Bose of sexual harassment and molestation.

The woman, identified as ‘XXX’ in Supreme Court records to protect her identity, said the “absolute immunity” given to the Governor is based on the victorian belief that the “King can do no wrong”. She said the police have treated her complaint against the constitutional authority in a “cavalier manner” citing the immunity clause. She said the only option left to her is to wait for the Governor to demit office for the investigation to commence on her complaint of gender violence. She, however, fears that the delay in the criminal investigation against such a powerful person may eventually deny her justice during trial. She has urged the court to mandate the State of West Bengal through its police machinery to carry out an investigation. The employee has also asked the court to frame guidelines and qualify the extent of the immunity.

Do Governors have immunity?

Article 361 (1) provides that the President and Governors are not answerable to any court for acts done in exercise and performance of their powers and duties.

However the first proviso to Article 361(1) allows the conduct of the President to be reviewed by any court, tribunal or body designated by either House of Parliament for the investigation of a charge under Article 61 (impeachment for violation of the Constitution). The second proviso to Article 361(1) holds that the immunity cannot stop a person from suing the Centre or State concerned.

The clause in question before the Supreme Court in the current case is clause (2) of Article 361 which mandates that “no criminal proceedings whatsoever shall be instituted or continued against the President, or the Governor of a State, in any court during his term of office”. The apex court has decided to interpret clause (2) of Article 361 to determine when exactly could criminal proceedings be instituted against a President or Governor. In short, the court has decided to rattle the protective cover of immunity to see if it is “unfettered or unbridled”.

Interestingly, the Constituent Assembly debates on Article 361 (Draft Article 302) in September 1949 show that a Member had indeed found the language of clause (2) vague. The discussion concerned the phrase “during the term of his office” in Article 361(2). The Member had queried if this would mean the President or a Governor could enjoy immunity by continuing in office despite committing a criminal act. The question was left open.



What are the arguments raised?

The petitioner argues that a bar on criminal proceedings under Article 361(2) does not extend to illegal acts or those which “strike at the roots” of a citizen’s fundamental rights. The alleged actions of Governor Bose infringed upon her right to life under Article 21 of the Constitution, she submitted. The immunity under Article 361 cannot impair the police’s powers to investigate the offence or even name the perpetrator in the complaint/FIR. No part of the powers of the Governor provide for him to sexually abuse employees, the employee said.

The Supreme Court, in *Rameshwar Prasad vs. Union of India*, had interpreted that ‘civil immunity’ under Article 361(4) did not take away the power of citizens to challenge the actions of the President or Governors on the ground of ‘malafides’. An analogy could be drawn to interpret criminal immunity the same way. The petition referred to a Madhya Pradesh High Court ruling in *Ram Naresh vs State of Madhya Pradesh*, which had held that the immunity would not impair the police’s powers to investigate an offence, which included recording the Governor’s statement.

FISCAL FEDERALISM

It is not often that fiscal federalism finds a prominent place in judicial discourse. The Supreme Court judgment, holding by an overwhelming majority of 8:1 that the States can tax mineral rights and mineral-bearing lands, is a truly landmark ruling, as it protects their legislative domain from interference by Parliament. For decades, it was believed that the States were denuded of their power to impose any tax on mineral resources extracted from their land because of the prevalence of a central law, the Mines and Minerals (Development and Regulation) Act, 1957. Even though the right to tax mineral rights is conferred on the States through Entry 50 in the State List of the Seventh Schedule, it was made “subject to any limitations imposed by Parliament by law relating to mineral development”. The Union government argued that the very existence of its 1957 law was a limitation on the States’ power to tax mineral rights, but Chief Justice of India, Dr. D.Y. Chandrachud, writing for the Bench, examined the Act’s provisions to conclude that it contained no such limitation. The royalty envisaged by the 1957 Act was held to be not a tax at all. The Union was hoping that once royalty was accepted as a tax, it would wholly occupy the field and thus remove the States’ scope for taxing mineral rights. However, the Court chose to see royalty as a contractual consideration for enjoyment of mineral rights. Also, it ruled that States could tax mineral-bearing lands under Entry 49, a general power to tax lands.

Proponents of fiscal federalism and autonomy will particularly welcome the fact that the judgment opens up a significant new taxation avenue for the States, and the observation that any dilution of the taxation powers of the States would adversely affect their ability to deliver welfare schemes and services to the people. However, Justice B. V. Nagarathna, in her dissent, argues that if the Court did not recognise the central law as a limitation on the State’s taxation powers, it would have undesirable consequences as States would enter into an unhealthy competition to derive additional revenue, resulting in an uneven and uncoordinated spike in the cost of minerals; and purchasers of minerals paying too much, leading to an increase in the price of industrial products. Further, the national market may be exploited for arbitrage. Given these implications, it is possible that the Centre may seek to amend the law to impose explicit limitations on the States’ taxation power or even prohibit them from imposing a tax on mineral rights. However, such a move may result in mining activities being left wholly out of the tax net, as the majority has also held that Parliament lacks the legislative competence to tax mineral rights.



For your information

— Royalties refer to the fees paid to the owner of a product in exchange for the right to use that product. For example, if a movie studio wants to use an existing piece of music by a specific artist in their new film, they will have to pay a royalty fee that goes to the artist.

— The majority held that a royalty is not a tax because there is a “conceptual difference” between royalties and taxes. Royalties are based on specific contracts or agreements between the mining leaseholder and the lessor (the person who leases the property) who can even be a private party.

— The court also held that Parliament’s powers under Entry 54 of the Union List do not extend to imposing taxes, as that power exclusively rests with state legislatures. However, Entry 50 allows Parliament to place “any limitations” on states’ power to impose taxes, which the court held “may include even a ‘prohibition’” against imposing taxes.

— The court did not limit states’ power to tax mineral development activities to Entry 50, though. It held that the state also had the power to tax the land where mines and quarries are located.

HOW AND WHEN CAN A BILL BE DEFINED AS A MONEY BILL?

The story so far:

The Chief Justice of India (CJI) has agreed to list before Constitution Benches, the petitions challenging the money Bill route taken by the Centre to pass contentious laws/amendments.

What are money and financial Bills?

The Constitution defines certain categories of bills that deal with financial matters as money Bills and financial Bills. Article 110(1)(a) to (f) defines a money Bill as a bill that contains ‘only’ provisions dealing with one or more of six specific matters. They relate to taxation; borrowing by government; custody of consolidated fund or contingency fund and payment/withdrawal of money from such fund; appropriation out of consolidated fund; expenditure charged on consolidated fund; receipt on account of consolidated fund or public account or the audit of accounts of Union or States. Clause (g) of Article 110 (1) provides that any matter incidental to these six matters can also be classified as a money Bill. Classic examples of money Bills include the Finance Act and the Appropriation Act that deal primarily ‘only’ with taxation and spending out of the consolidated fund respectively. Article 117 provides for two different categories of financial Bills. Category I contains any of the six matters mentioned in Article 110(1)(a) to (f) along with any other matter. Category II Bills do not contain any of those six matters but would involve expenditures from the consolidated fund.

What is procedure for a money Bill?

As per Article 109, a money Bill shall be introduced only in the Lok Sabha. After it is passed in the Lok Sabha, the Rajya Sabha has only 14 days to provide its recommendations on such a Bill which may or may not be accepted by the Lok Sabha. Money Bills deal ‘only’ with financial matters that are crucial for the administration of the country. Hence, the Constitution provides for this special procedure that effectively requires only the approval of Lok Sabha where the ruling government enjoys a majority. It has its origin in the U.K., where in 1911 the powers of the unelected House of Lords over the Budget were curtailed. The Budget was required to be passed only by the House of Commons that reflected the will of the people. However, it must be noted that the operative word



of the definition of a money Bill is the word 'only.' It is the Speaker of Lok Sabha who certifies a Bill to be a money Bill.

Financial Bills of Category I and II do not enjoy this special procedure.

What are the issues?

Certification of a Bill as a 'money Bill' by the Speaker came under judicial review during the scrutiny of the Aadhaar Act passed in 2016. This law contains provisions with respect to process for enrolment and authentication, establishment of authority for Aadhaar, mechanism for safeguards, and penalties for offences under the Act. Section 7 of the Act provides that the Central or State government may require Aadhaar authentication of an individual as a condition for providing subsidy, benefit or service, for which expenditure is incurred from the consolidated fund. Stating the withdrawal of funds from the consolidated fund as the primary purpose of the Act, with all other provisions being incidental to it, this law was passed as a 'money Bill'. While this was a debatable classification, the Supreme Court upheld this with a majority of 4:1. The current CJI was the lone dissenting judge who held that the Aadhaar Act did not fulfil the definition of a 'money Bill'.

The Finance Act, 2017 was even more controversial, in passing amendments to various Acts for reorganisation of tribunals such as the National Green Tribunal, as a money Bill. These amendments were struck down in *Rojer Mathew versus South Indian Bank (2019)* wherein a five-judge Bench opined that the Aadhaar case judgment did not substantially discuss the effect of the word 'only' in the definition of money Bill. It referred the matter to a larger Bench for consideration. A seven-judge Bench should be constituted for an authoritative judgment on the definition of money Bills. The Speakers should also uphold the spirit of the definition while certifying a 'money Bill.'

WILL LOCAL JOB QUOTAS PASS THE LEGAL TEST?

The story so far:

The Karnataka State Employment of Local Candidates in the Industries, Factories and Other Establishments Bill, 2024, which aims to provide reservation for Kannadigas in the private sector in the State, has been put on hold after severe backlash from business leaders and industry representatives. The Bill was cleared by the Cabinet, but is yet to be introduced in the Assembly. The government has promised wider consultations with stakeholders before it takes the next step. The legality and constitutionality of such quotas for local candidates, however, are in doubt, as similar steps elsewhere have run into legal impediments.

What does the Bill propose?

The Bill made it a rule that any factory, industry or establishment must appoint local candidates to 50% of its managerial category and 70% of its non-managerial category.

'Local candidate' is defined as anyone born in Karnataka, domiciled for at least 15 years in the State, and who can read, write and speak Kannada. Candidates not possessing a secondary school certificate with Kannada as a language must pass a Kannada proficiency test prescribed by a nodal agency.



Where qualified or suitable candidates are not available, the Bill gives three years to the establishments to train and engage local candidates. They may also apply to the government for relaxation of norms, but the relaxation cannot be less than 25% for management category and 50% for non-management category.

Why is industry opposed to it?

Business and industry responded with alarm on hearing of the features of the proposed Bill. They felt that such measures would drive out companies from the State and impact foreign investment. NASSCOM, the national lobbying body of the software industry, said it was deeply disturbing. The Bill, it felt, would “hamper the growth of the industry, impact jobs and the global brand for the State”. Many expressed concern over the impact of such measures on Karnataka’s leading position in technology and described it as regressive and short-sighted.

What about similar laws in other States?

Andhra Pradesh, Haryana and Jharkhand are among the States that have tried to bring in legislation to mandate reservation for domiciles or local residents in the government or private sector. The Andhra Pradesh Employment of Local Candidates in the Industries/Factories Act, 2019, sought to introduce 75% reservation for local people in any industry, factory, joint venture or project taken up in the public-private partnership mode. It also gave a three-year period for training and engaging local candidates, if suitable candidates were not available. The Act has been challenged in the Andhra Pradesh High Court, but the government itself has not been zealously implementing its provisions so far.

The Haryana State Employment of Local Candidates Act, 2020, was struck down by the Punjab and Haryana High Court, and the matter is now before the Supreme Court. It provided for 75% reservation in the private sector for jobs that entailed a salary of up to ₹30,000 a month. It also came with a sunset clause that said it would lapse after 10 years. The court held that the law violates fundamental rights and that it is beyond the State Assembly’s purview to legislate on the issue. It said such enactments would result in States putting up “artificial walls” throughout the country.

The Jharkhand Definition of Local Persons and for Extending the Consequential Social, Cultural and Other Benefits to such Local Persons Bill was passed in 2022. Jharkhand Governor C.P. Radhakrishnan returned the Bill with comments to the effect that providing for 100% reservation for locals in Class III and Class IV employment opportunities may be unconstitutional. The Hemant Soren government, however, got it re-enacted in the Assembly in December 2023.

What are the constitutional issues that arise?

In broad terms, these issues arise from the absence of any provision in the Constitution for private sector job reservation, the absence of legislative power in State Assemblies to prescribe residential criteria for employment, the constitutional guarantee of freedom from discrimination on grounds of place of birth or residence and the fundamental right to practise any profession, or carry on any occupation, trade or business.

Article 16 lays down that there shall be equality of opportunity in public employment. It prohibits discrimination on grounds of race, religion, caste, sex, descent, place of birth or residence with respect to any employment or office under the state.



Article 16(3) allows Parliament to make any law prescribing a requirement as to residence within a State or Union Territory prior to employment or appointment to a public office in that State or Union Territory. Article 35(a) says Parliament alone, and not any State legislature, will have the power to enact such a law as to a residential requirement.

Another constitutional issue is the effect local quotas have on the freedom of movement of citizens throughout the territory of India, guaranteed by Article 19(1)(d). Any curbs on people belonging to one State to seek employment in another will inevitably impinge on their right to reside and settle in another State, enshrined in Article 19(1)(e).

As far as individuals are concerned, the restriction on hiring people of their choice may violate their right under Article 19(1)(g) to carry on any occupation, trade or business.

EXPLAINED: PANCHAMASALI LINGAYATS, AND POLITICS SURROUNDING THEIR QUOTA DEMANDS

Panchamasali Lingayats, a sub-caste of Karnataka's dominant Lingayat community, have been demanding inclusion in Category 2A of the Other Backward Classes (OBC) for more than three years.

— The Lingayat community currently enjoys under Category 3B of Karnataka's OBC quota matrix.

— The Lingayats (officially classified as Hindu sub-caste 'Veerashaiva Lingayats') are followers of Basavanna, a 12th century philosopher-saint who started a radical anti-caste movement which rejected orthodox ritualistic Hindu practices in favour of a more personal, affective relationship with God, specifically Lord Shiva.

— Today, the Lingayat community is an amalgamation of many sub-castes. Of these sub-castes, the agriculturalist Panchamasalis are the largest, making up nearly 70 per cent of the Lingayat population. They claim to number around 85 lakh — about 14% of Karnataka's population of roughly six crore.

— OBCs comprise many different castes and sub-castes who are at different levels of marginalisation depending on whether they own land, their occupation, etc. To prevent any one dominant OBC group from cornering all quota benefits, most states have come up with further sub-categorisation of OBCs, which takes into account different castes' relative marginalisation, and their populations.

— In Karnataka, the 32 per cent total reservation for OBCs in government jobs and college admissions is distributed among five categories. Of these, at present, 102 castes fall in the 2A OBC category in Karnataka.

— Currently, only 16 Lingayat sub-castes who are considered "very backward" are provided reservations under the OBC quota for central government jobs and college administrations.

A PROCESS MORE PUNISHING

The Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) has replaced the Code of Criminal Procedure, 1973 (CrPC).



— The CrPC was not the coloniser’s instrument, but a post-colonial law that had undergone reforms in independent India. As a practitioner of criminal law, there is no statute more important than the CrPC that stands by the side of any accused.

— The custody of an accused is broadly divided into two kinds — police and judicial. The former means that the police have principal control or physical custody over you, while the latter typically has you placed in a jail which has its own institutional rules and regulations, including visiting hours, access of the police to the accused, mealtimes, and sleep time. It is police custody which is typically the harshest experience for any accused.

— Section 167 of the CrPC authorised custody up to a maximum of 60 or 90 days, depending on the extent of punishment prescribed.

— It is evident from this that the attempt was to limit police custody and protect the accused from police excesses by mandating that police custody would only be up to 15 days. Section 187 of the BNSS does otherwise...

— The Unlawful Activities (Prevention) Act, 1967 (UAPA), which prescribes a maximum limit of 30 days for police custody. Further, section 43 D of UAPA mandates that the investigating officer is required to file an affidavit providing reasons for seeking police custody, if the accused is in judicial custody. By contrast the BNSS, which is a statute pertaining to general criminal law, enables a three-fold increase of the maximum period of police custody as compared to even UAPA.

— This is a constitutionally burdensome provision that will impinge on the rights of an accused. Spending up to 90 days with the police having unimpeded access to an accused is debilitating from the point of view of rights to life, health (including mental well-being) and fair trial.

— The BNSS, thus, nullifies safeguards against police excesses and violates an undertrial’s right under Article 21 of the Constitution. For an accused to be held in police custody for such a long period can make her susceptible to custodial violence/torture.

For Your Information:

— The Bharatiya Nyaya Sanhita (BNS), the Bharatiya Nagrik Suraksha Sanhita (BNSS), and the Bharatiya Sakshya Adhinyam (BSA), passed in Parliament last December, replaced the Indian Penal Code (IPC), 1860, the Criminal Procedure Code (CrPC), 1973, and the Indian Evidence Act, 1872 respectively.

NOT IN ORDER

The Supreme Court of India on Monday stopped the enforcement of directives issued by the Uttar Pradesh and Uttarakhand governments that required food stalls on the route of the Kanwar Yatra — an increasingly popular pilgrimage that Shiva devotees undertake — to prominently exhibit the names and other identity details of their owners and employees. Petitioners argued that the directives would result in discriminatory outcomes, besides negating the secular character of the country. The Court accepted the need for urgent judicial intervention in the matter and issued notices to the States that fall in the route — Uttar Pradesh, Uttarakhand, Delhi and Madhya Pradesh. The case will come up for hearing again on Friday. The yatra takes place during the Hindu month of Shravan when those who worship Shiva — popularly known as Kanwariyas or Bhole



— walk hundreds of kilometres carrying pots of Ganga jal, known as kanwar (a structure made of bamboo that has containers suspended on both sides of a pole), to the temples in their home town. The yatra is increasingly popular, particularly among the Dalit and Other Backward Classes in the Hindi heartland. The police in Muzaffarnagar, western U.P., were the first to issue the controversial directive last week, which they said was done to ‘prevent any untoward incident’.

The discriminatory nature of this move became clear soon, and was criticised by the Opposition and National Democratic Alliance allies. Amid the criticism, U.P. Chief Minister Yogi Adityanath extended the requirement across the entire route of the pilgrimage in the State. The Bharatiya Janata Party (BJP) government in neighbouring Uttarakhand followed suit. Reports emerged of Hindu hotel owners being asked by the administration to remove their Muslim workers; there were also accounts of harassment of meat shop owners. BJP allies, the Rashtriya Lok Dal (RLD) and the Janata Dal (United), joined the Opposition Congress and the Samajwadi Party in calling out the brazenly communal move of the BJP governments. Many pilgrimages in India are undertaken and organised jointly by people of different faiths, and as it turns out, there are Muslims too who trek with Hindus to take part in this unique form of Shiva worship. All along the route, they have, for years, been served by Muslim shop owners and even volunteers. Muslim artisans make a living by making the kanwar in some parts. The economic, cultural and social aspects of the Kanwar Yatra — as with any other pilgrimage — are shared by people of various sects and religions. The government directive was unreasonable and achieved nothing other than promoting communal enmity. U.P. and Uttarakhand should withdraw their directives without waiting for the decision of the Court.

JUSTICE FOR FAIZAN

In February 2020, more than 50 people died, many more were injured and hundreds affected in one of the worst communal riots in India’s national capital in decades. The Delhi Police invited criticism, not just for lacking the will to stem the violence — the brunt of which was borne by the minorities — but some cops were also accused of abetting mobs that had a free run of the city for at least four days. A Fact-Finding Committee of the Delhi Minorities Commission found “that victims themselves were arrested, especially when they filed or attempted to file complaints”. Now, the Delhi High Court has called out some of the custodians of law for being “driven by bigoted mindsets”. The Court took note of two online videos that had gone viral when the riots were raging. They show policemen raining blows on Faizan, a resident of northeast Delhi, humiliating him and forcing him to sing Vande Mataram and the national anthem.

The Court was responding to a petition by Faizan’s mother, who had alleged that the cops detained the 23-year old illegally, denied him medical care, resulting in his death at a hospital. Its 38-page order is a stinging indictment of the Delhi Police’s “tardy” probe into allegations against its own personnel. Particularly resonant are its words of outrage: “The element of abomination gets aggravated if a hate crime is committed by a person in uniform”. This observation is of a piece with several studies, including those by the police itself. For instance, a 2014 report by the then DGs of Maharashtra, Uttar Pradesh and Tamil Nadu noted that minorities view police as partisan to the majority community. It pointed out that “the demeanour of some police officers and men in several serious communal riots... has served to strengthen such beliefs”. By “conveniently sparing the persons involved in the brutal attack” against Faizan, as the Delhi HC has said, the Delhi Police may have reinforced such distrust.

On being told that the Court has directed the CBI to investigate Faizan’s case and bring the guilty to book, his mother expressed the hope that justice may finally be served. In March 2020, about a

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



week after the riots, Home Minister Amit Shah had told the Rajya Sabha that “the government will not spare anyone from any side”. However, as the HC observed, “even after four-and-a-half years, the perpetrators of the crime” are at large. After its verdict, the Home Minister’s promise will again be tested by the quality of justice that is served to Faizan’s mother — and others like her.

WHY THE SUPREME COURT COULDN’T AGREE ON ENVIRONMENTAL RELEASE OF GM MUSTARD

A two-judge Bench of the Supreme Court on Tuesday (July 23) delivered a split verdict on whether to allow the “environmental release” of Genetically Modified (GM) mustard.

Justices B V Nagarathna and Sanjay Karol disagreed on whether the approval given by the Genetic Engineering Appraisal Committee (GEAC) — the body that is responsible for approving proposals relating to genetically engineered organisms — to proceed with field trials following the environmental release was done properly. This was the GEAC’s second major push to introduce GM mustard as the first GM crop that is meant for human consumption. *Bacillus thuringiensis* cotton (or Bt cotton) is the only GM crop that has been approved for cultivation in India so far.

When a split decision is delivered, the case is referred to the Chief Justice of India for placing before a larger Bench. However, both judges directed the Union of India “to evolve a National Policy with regard to GM crops”, and to consult experts, farmer representatives, and state governments during the process.

Story of GM mustard

On September 15, 2015, the Centre for Genetic Manipulation of Crop Plants (CGMCP) at the Delhi University sought the GEAC’s approval for the environmental release of a genetically engineered hybrid mustard called DMH-11 (commonly known as GM mustard).

Mustard flowers contain both female (pistil) and male (stamen) reproductive organs, which makes the plant largely self-pollinating. The GM mustard developed by the DU scientists contains two alien genes — the first, ‘barnase’, gene interferes with pollen production and renders the plant male-sterile, and the resulting plant is crossed with fertile mustard flowers containing the second, ‘barstar’, gene which blocks the action of the barnase gene. The resulting plants are meant to be high-yield variants of mustard.

Along with the proposal, the CGMCP submitted a biosafety dossier, and the GEAC created a sub-committee to examine its contents. Following some revisions, the sub-committee considered the dossier and submitted its report. In September 2016, the report was published and comments were invited.

On May 11, 2017, the GEAC recommended the environmental release of GM mustard. If approved, this would allow field tests to be conducted to examine the effects of cultivating the crop.

However, after receiving several representations, the Ministry of Environment sent the proposal back to the GEAC for re-examination in March 2018. The GEAC then directed the CGMCP to examine the effect of GM mustard on honey bees and soil microbial diversity. But these tests were deferred through 2020-21.

In May 2022, gene scientist Prof Deepak Pental on behalf of the CGMCP wrote to the Minister for Environment urging him to accept the recommendation for the environmental release of GM



mustard. The GEAC sought comments from various government departments, which recommended releasing GM mustard. The proposal was submitted on October 18, 2022. It was accepted by the Centre on October 25, and recommendations and conditions regarding the field tests were sent to Prof Pental.

Case before the SC

Environmentalist Aruna Rodrigues and the research and advocacy organisation Gene Campaign challenged the decision to approve the environmental release of GM mustard before the Supreme Court.

In their split decision, the judges disagreed on two key aspects: first, whether the GEAC's decision-making process was legal and, second, whether it violated the "precautionary principle" for scientific innovations. The precautionary principle, a standard test in environmental litigation, is recognised as a facet of the right to a clean environment, a subset of Article 21 (fundamental right to life).

JUSTICE NAGARATHNA said that the field tests that the GEAC committed to conducting with the CGMCP did not take place. Instead, the GEAC did a "volte-face" after Prof Pental sent the letter to the Centre in May 2022, and recommended the environmental release of GM mustard regardless. This shift in stance without providing any reasons, shows there was no "application of mind" by the GEAC, which is in "gross violation of the principle of public trust", Justice Nagarathna ruled.

She also said that the GEAC did not sanction any studies on the long-term effects that GM mustard could have on future generations. The process adopted by the GEAC "has failed to take into consideration the precautionary principles while approving the environmental release of the transgenic mustard", violating both the precautionary principle and the right to a safe and healthy environment, she said.

JUSTICE KAROL held that environmental release and the following tests and trials were in line with "the development of a scientific temper" and abided by the precautionary principle. "Without field trials, the performance of the plant in the field or environmental safety of such plant cannot be known. Studies, being conducted in open environment is necessary for studying the impact on human health and biodiversity, for the performance of a GM crop is dependent on a host environment," he said.

Justice Karol held that the GEAC's process was "independent" and "reasoned". He observed that the GEAC-appointed expert committee had found that honeybees do not discriminate between other GM crops such as genetically engineered canola. He noted that the Department of Biotechnology and the Department of Agricultural Research and Education had both recommended the environmental release of GM mustard.

PRIVATE BILLS IN HOUSE: 10 LOK SABHA SEATS FOR YOUTH TO ANOTHER SPL PACKAGE FOR BIHAR

From reservation for the socially disadvantaged in the private sector to keeping 10 seats in Lok Sabha for those aged under 35 years, a special package for Dalits and backward communities in Bihar to a special Act to control floods in the state — these were some of the Private Member's Bills introduced by MPs across party lines in the Lower House on Friday.



Key takeaways:

- Congress MP Shashi Tharoor introduced three Bills: demanding the constitution of a high court bench in Thiruvananthapuram; 1% reservation for transgender persons across categories in government establishments, including educational institutions, and reservation of 10 seats in Lok Sabha for the youth.
- Though Bihar has got a special financial package in the Union Budget, JD(U) MP from Gopalganj Alok Kumar Suman introduced a Bill demanding a separate special package for SC, ST and OBCs in the state.
- Independent MP from Nagina Chandrashekhar Azad introduced a Bill to grant reservations to SC, ST and OBCs in the private sector.
- Azad also introduced two other bills: one demanding hostels for disadvantaged sections of the society and another for free schooling for such sections.

For Your Information:

- An MP who is not a minister is a private member and while both private members and ministers take part in the lawmaking process, Bills introduced by private members are referred to as private member's Bills and those introduced by ministers are called government Bills.
- Before the Bill can be listed for introduction, the Member must give at least a month's notice, for the House Secretariat to examine it for compliance with constitutional provisions and rules on legislation. While a government Bill can be introduced and discussed on any day, a private member's bill can only be introduced and discussed on Fridays.
- **To date, only 14 of Private Bills have become Acts. Six of the 14 Bills became law in 1956 and the last one to receive parliamentary approval was the Supreme Court (Enlargement of Criminal Appellate Jurisdiction) Bill, 1968, on August 9, 1970.**

WHAT ARE THE RULES FOR IAS PROBATIONERS?

The story so far:

On July 19, the Union Public Service Commission (UPSC) said it has registered a criminal case against Puja Khedkar, a 2022 batch Indian Administrative Service (IAS) officer on probation, and issued a show cause notice cancelling her candidature from the Civil Services Examination-2022. It said she had fraudulently availed attempts beyond the permissible limit under the examination rules by faking her identity by changing her name, her father's and mother's name, photograph and signature, email ID, mobile number and address.

How did things come to a head?

Earlier in July, Ms. Khedkar was transferred from Pune to Washim in Maharashtra following complaints of misuse of power by a senior officer. Ms. Khedkar, posted as Assistant Collector in Pune, allegedly demanded special privileges such as a separate office, house, car, and staff which she was not entitled to. Soon it transpired that the trainee officer, daughter of a retired bureaucrat who also contested the 2024 parliamentary elections from Ahmednagar, allegedly submitted fake disability and Other Backward Class (OBC) certificates to clear the civil services exam. Following the controversy, on July 11, the Department of Personnel and Training (DOPT) constituted a



single-member committee, chaired by a senior officer of the rank of Additional Secretary, to verify the candidature claims and other details of Ms. Khedkar. The committee will submit its report within two weeks. In an order in 2023, the Central Administrative Tribunal (CAT) said though Ms. Khedkar had successfully cleared the examinations, she skipped six medical examinations to prove her disability before a medical board at AIIMS, Delhi, adding that “her candidature is liable to be cancelled.”

The CAT order was in response to a petition filed by Ms. Khedkar in 2021 seeking relaxation of the number of attempts by Persons with Benchmark Disabilities (PwBD). Despite the ruling, she was inducted in the services after she reappeared for the exams in 2022 and with a rank of 821 got PwBD reservation benefits under a different category — “visually impaired and hearing loss.” In the previous instance, she had applied under the “visual impairment and mental illness” category. Significantly, the DOPT was a respondent in the 2021 petition. By forging her identity, name etc., Ms. Khedkar appeared for the civil services examination 12 times. General category candidates are allowed six attempts till they attain 32 years of age. Those availing OBC and PwBD reservation are allowed nine attempts till the age of 35 and 42 years respectively. Candidates belonging to Scheduled Castes (SC) and Scheduled Tribes (ST) are allowed unlimited attempts till 37 years of age.

How are documents scrutinised?

The UPSC conducts examinations and interviews on behalf of the Union Government after which candidates are recommended for appointment by the commission to various Services. At the examination stage, candidates have to submit documents supporting their claims for reservation under various categories — SC, ST, OBCs, Economically Weaker Section (EWS) and PwBD. The first phase of scrutiny is done by the UPSC, which only goes by the documents submitted by the candidates. After the personal interview, all candidates are sent for a medical check-up at government hospitals endorsed by the commission. PwBD candidates have to appear before a medical board at AIIMS, Delhi to determine the level of disability. The files are then sent to the DOPT, which accords the Service after accommodating various quotas.

What is the probation period?

The probation period typically lasts two years, but it may be extended for a maximum of four years if the candidate needs improvement or has been unable to clear the examinations at the training academy. According to DOPT, “A person is appointed on probation in order to assess his suitability for absorption in the Service to which he has been appointed. Probation should not, therefore, be treated as a mere formality.”

What disciplinary action can be taken?

A probationer is discharged from service. The discharge can be on account of failure to clear the examinations at the training academy or “if the Central Government is satisfied that the probationer was ineligible for recruitment to the Service or is unsuitable for being a member of the Service.” The discharge can also be ordered if in the opinion of the Central Government he/she has wilfully neglected his probationary studies or duties or is found lacking in qualities of mind and character needed for the Service.



GOVT SERVANTS AND RSS ACTIVITIES: WHAT RULES SAY

The Centre has decided that the “mention of Rashtriya Swayamsevak Sangh (RSS)” as an organisation that government officials cannot be part of, should be “removed”. This bar on officials participating in activities of the RSS first came into effect almost six decades ago.

— On July 9, the DoPT, which manages the central government’s human resources, said the government has “reviewed” instructions issued in 1966, 1970, and 1980, “and it has been decided to remove the mention of Rashtriya Swayamsevak Sangh (RSS) from the impugned OMs (Official Memorandums) dated 30.11.1966, 25.07.1970 and 28.10.1980”.

— Rule 5 of the 1964 Rules is about “Taking part in politics and elections”. Rule 5(1) says: “No Government servant shall be a member of, or be otherwise associated with, any political party or any organisation which takes part in politics nor shall he take part in, subscribe in aid of, or assist in any other manner, any political movement or activity.”

— The All India Services (Conduct) Rules, 1968, which apply to officers of the IAS, IPS, and Indian Forest Service, has a similar Rule 5(1).

— During the Emergency (1975-77), orders were issued to take action against workers of the RSS, Jamaat-e-Islami, Ananda Marg and CPI-ML, whose activities had been banned.

— Before the notification of the Central Civil Services (Conduct) Rules, 1964, and the All India Services (Conduct) Rules, 1968, there was the Government Servants’ Conduct Rules, which were framed in 1949, when Sardar Vallabhbhai Patel was home minister. Rule 23 of 1949 was the same as Rule 5 of 1964 and 1968.

— July 9 Circular means that the RSS is not a “political” organisation, and that central government employees can now take part in RSS activities without fear of attracting action under Rule 5(1) of the Conduct Rules.

For Your Information:

— The RSS has been banned thrice in independent India. Government employees were not allowed to join the RSS, though several states have lifted this ban over the years.

— Days after Mahatma Gandhi was killed by Nathuram Godse, the RSS was banned on February 4, 1948. In a statement, the government said the ban was being imposed to “root out the forces of hate and violence” at work in the country.

DECODE POLITICS: WHY THE TRIBAL DEMAND FOR ‘BHIL PRADESH’ HAS RETURNED TO HAUNT RAJASTHAN POLITICS

The demand of the Bhil tribal community for a separate state is gaining momentum in Rajasthan. On July 18, many members of the Bhil community gathered for a “maha sammelan” at Mangarh Dham in Banswara, a tribal-dominated district, and raised the demand for a separate state of “Bhil Pradesh” by carving out 49 districts from four states.

The demand for Bhil Pradesh has been frequently raised by tribal leaders over the years, and the Bharat Adivasi Party (BAP), formed last year as a breakaway faction of the Bharatiya Tribal Party



(BTP), has been buoyed by its performance in the recent Lok Sabha polls to champion it with renewed vigour.

As per Census 2011, there are 1.7 crore Bhils across the country. Their largest concentration is in Madhya Pradesh at about 60 lakh, followed by 42 lakh in Gujarat, 41 lakh in Rajasthan and 26 lakh in Maharashtra.

What is the history of the 'Bhil Pradesh' demand?

According to Roat and other BAP leaders, the demand for Bhil Pradesh dates back to 1913. The BTP leaders claim that Govind Giri Banjara, a tribal activist and social reformer, first demanded a Bhil state in 1913 when he mobilised a gathering of thousands of tribals at Mangarh Hill. On November 17, 1913, around 1,500 tribals were massacred by the British for their rebellion.

Roat said his party was just following the footsteps of their ancestors. "Govindji Maharaj demanded a separate Bhil state, so that the exploitation of tribals, which has been going on for so long, will end. The British government even drafted a map for a separate Bhil state in the 1900s, which is proof this is not a newly created demand but that we are fighting a battle for our existence," he said.

Over the years, various tribal leaders have voiced their demand for a separate Bhil state. Nand Lal Meena, former minister in the then Vasundhara Raje-led BJP government, had demanded a separate state for the tribal community and several former MPs and MLAs had backed it. However, many including Meena, have softened their stance on the issue in recent years.

Sources in the Congress say the party has always supported the Bhil Pradesh demand as it has a strong presence in tribal belts. However, since the rise of the BTP and the BAP, the Congress has backed down over the issue and has now decided not to vocally support it.

SELECT TOWNS ARE HOST TO NEET-UG-2024 BEST PERFORMERS

Data released by the National Testing Agency on NEET-UG for 2024 show that the cities with the highest share of students scoring 650 or more out of 720 in the exam were Sikar in Rajasthan, followed by Namakkal in Tamil Nadu, Kottayam in Kerala, Tanuku in Andhra Pradesh (AP), Jhunjhunu in Rajasthan, and Kurukshetra in Haryana.

A score of 650 and above gives candidates a high probability of securing admission in government medical colleges. The share of candidates who scored 650 and above in each city across centres: Sikar was on top of the list with 7.5% (2,037 candidates), followed by Namakkal (5.1%, 313), Kottayam (4.4%, 544), Tanuku (4.1%, 41), Jhunjhunu (3.96%, 196) and Kurukshetra (3.96%, 196). In Kota, the touted coaching hub in Rajasthan, 1,066 candidates scored 650 and above. This was the second highest absolute number after Sikar.

From Sikar, 149 candidates (0.55%) scored 700 or more — the highest in any city. Jaipur (131, 0.24%), Delhi (120, 0.18%), Kota (74, 0.27%), Bengaluru-Urban (74, 0.25%) Kottayam (61, 0.49%), Ahmedabad (53, 0.45%), Vijayawada (50, 0.34%), Pune (41, 0.18%), Chennai (41, 0.18%) rounded up the top 10 in absolute terms. In Namakkal, 31 candidates (0.52%) scored 700 or above. This was the second highest share after Sikar.

The fact that Namakkal hosts the highest share of candidates scoring 650 or more in Tamil Nadu is revealing given the significant opposition to NEET in the State. Prior to the implementation of



NEET, Namakkal used to feature “super schools”, which generated “toppers” in the Class 12 Board exam. Now, the city is a hub for coaching institutes that train candidates for the NEET/JEE exams.

No other city/town in Tamil Nadu came close to Namakkal’s proportion of candidates (5.1%) who scored 650 or more — the second best, Chennai, registered only 1.61%. Tanuku in Andhra Pradesh also showed a similar pattern — Vijayawada with 2.4% had the second highest share in the State.

In terms of centres, the share of candidates scoring 650 or more was the highest (12.64%) at Tagore P.G. College in Sikar. In fact, eight more centres from Sikar were in the top 10, and 37 of the top 50 centres are also from Sikar. Delhi Public School in Rewari, Haryana, registered the highest proportion of scores of 600 or more among all the centres (22.73%, 60 out of 264 candidates), while 25 candidates scored 650 or more (9.5%).

Petitioners who have demanded a re-exam in the Supreme Court have alleged that the numbers from Rewari are an anomaly. That said, Rewari as a city with 10 centres had a relatively high average score among candidates — 288, the 16th best for any town/city — and its Delhi Public School centre leads the country with an average of 406.34. In Haryana in general, candidates scored 650 or more in a considerable number of cities and towns. They constitute more than 3% of the overall exam-takers, next only to Rajasthan.

While the scores in centres that have registered a high average does not follow a typical normal distribution, there are also some centres with low averages but more than a few candidates who have performed exceedingly well. Therefore, merely looking at 2024 data without a State-wise, city-wise, and centre-wise comparison with other years would not help in decisively pointing out anomalies and concluding that there has been large-scale fraud in the implementation of the NEET-UG exam.

CLEANSING NEET

What comes undone is best redone. The latest development in the prolonged National Eligibility cum Entrance Test (NEET) 2024 saga has played out in the court, and will answer the question raised initially — the unusually high number of toppers this year. The Supreme Court of India’s ruling on the right answer to a particular physics question in the NEET paper, based on the expert opinion of IIT Delhi professionals, has brought down the number of toppers from 61 to a more reasonable number — 17. The wrong answer for the disputed question was chosen reportedly by four lakh students, including 44 in the list of toppers. As a result, all these students will lose five marks each. Ruling that there could be only one correct answer, the Court directed the National Testing Agency (NTA) to revise the scores based on the correct answer. It also emerged during the hearing that the wrong answer for the question was actually present in the older (until 2021) NCERT textbooks. The Court had earlier refused to cancel the entire NEET, which over 23 lakh applicants took. While the scheduled date of counselling, July 24, is past already, and with the NTA having to re-tally the marks with the revised answer, the counselling has been delayed again, but will take place as soon as possible.

While the scenario, as it stands today, seems ostensibly resolved sufficiently to let the process move forward, the truth is that an unprecedented number of violations have occurred in a manner that vitiated, possibly for good, the faith in NEET as a fail-safe entrance route. From charges of paper leaks, giving out the wrong question papers, damaged answer keys, impersonation by students, and an analysis of marks that showed an unusually high number of toppers from certain



centres in the country, NEET-UG 2024 has been a string of bad news this year. Notably, the interventions to right the course have come mostly from the judiciary, with the executive stopping short of initiating significant or decisive action required to clean its Augean stables. For starters, the extraordinary emphasis that has come to be placed on medicine as a career choice, with over 23 lakh students hoping to compete for over one lakh MBBS seats, will have to be dialled down, with a healthy promotion of other scientific streams as viable career options. The government also has no option but to unwind the entire spool, and cast it out if it must, reorienting all systems so that the next NEET can be conducted professionally, and with adequate safeguards in place to prevent malpractice or inefficiency.

WHAT IS THE GENDER GAP IN EDUCATION?

The story so far:

The World Economic Forum (WEF) report of 2024 on global gender gaps recently ranked India at 129 out of 146 economies, with a decline in the education sector being one of the reasons for India's rank slipping a couple of places this year.

Where does the gap lie?

According to the WEF's June report, updated figures in educational attainment indicators have caused India's gender parity levels to dip from the previous year. "While the shares of women are high in primary, secondary and tertiary education enrolments, they have only been modestly increasing, and the gap between men and women's literacy rate is 17.2 percentage points wide, leaving India ranked 124th on this indicator," the 18th edition of the report said, recording a score of 0.964 in the education category. In the 17th edition, published in 2023, however, India had attained a perfect 1.000 score in terms of educational parity, ranking 26th in that category. The main indicators being tracked are enrolment levels in primary, secondary and tertiary education, as well as the adult literacy rate.

Asked about India's regression from the perfect score, WEF's Insight and Data Lead Ricky Li said that source data for Educational Attainment indicators is collected by UNESCO, whose figures are subject to data updates on a periodic basis. "In the 18th edition of the Index, the values used in the computation of India's Educational Attainment gender parity score correspond to [the] 2022 and 2023 periods. The 17th edition included data from 2018, 2021, and 2022," he told The Hindu. "An important aspect of the data to consider when interpreting the gender parity is the corresponding period, as a seemingly significant change in score could be reflecting an update in the values corresponding to the indicator," he added.

What do Indian statistics show?

The Union Education Ministry tracks school and college enrolment data using two major collection systems: the Unified District Information System for Education (UDISE+) and the All India Survey on Higher Education (AISHE). The UDISE+ report for 2021-22 shows that 13.79 crore boys were enrolled in school, in comparison to 12.73 crore girls, meaning that girls make up 48% of the school population. However, this varies at the different stages of school education. In preschool or kindergarten, girls make up 46.8% of enrolled children. By primary school (Classes 1 to 5), this rises to 47.8%, improving still further in upper primary or elementary school (Classes 6 to 8), when girls make up 48.3% of enrolled children. Clearly, some girls drop out of school at



that stage, when the right to free education ends after Class 8. The gender gap widens in secondary school (Class 9 and 10), with girls dropping to 47.9% of enrolled children.

However, girls who do have access to secondary education are more likely to stick to the finish: the higher secondary level (Class 11 and 12) has the lowest gender gap of 48.3%.

That trend continues into higher education, according to the AISHE report for 2021-22. In that year, the gross enrolment ratio (GER) for women in higher education — meaning the percentage of the population between 18 and 23 years enrolled in colleges and universities — across the country was 28.5, slightly higher than the male GER of 28.3. Female enrolment in higher education has seen a 32% increase since 2014-15. Neither the UDISE+ nor AISHE have yet published data for 2022-23.

What is the impact of a slew of packages to incentivise girls to get an education?

The biggest impact has come from simply building more schools. If a primary school exists within one or two kilometres of a child's home, parents are more likely to enrol their children, especially girls. "There has been enormous growth in the number of schools, especially since the mid-90s, which is when you also saw a spike in the enrolment of girls nationwide," says Vimala Ramachandran, a former Professor at the National Institute of Educational Planning and Administration and the first national director for Mahila Samakhya, a flagship Central government programme on education for rural girls and women. She notes regional differences, pointing out that in Gujarat, where the government built few secondary and higher secondary schools, leaving these largely to the private sector, girls make up only 45.2% of students in secondary classes, far behind much poorer States like Jharkhand (50.7%), Chhattisgarh (51.2%), Bihar (50.1%) and even Uttar Pradesh (45.4%).

Another important factor is the presence of women teachers. An adviser on child rights to a State government which has made progress in enrolment says the areas with low enrolment are mostly those with primary schools employing only one or two teachers. "If a school has only a male teacher, parents are not comfortable sending their daughters there," he said.

Transport to and from school can also be a barrier, and free bus passes for schoolgirls in States like Haryana, Punjab and Tamil Nadu, as well as schemes to give free cycles to girls in Bihar and other States have improved enrolment, though it did not work as well in Rajasthan. Sanitation issues remain a major obstacle for girls education in higher classes, especially after puberty, and may cause a large number of dropouts after Class 8. Though the Union and State governments have funded the construction of washrooms in schools, there is no funding for cleaning and maintenance, which is often left to lax local bodies.

What is the next challenge?

A number of States have successfully closed the gender gap in higher classes, to the extent that there are worries about boys dropping out before completing school. In West Bengal for instance, girls make up 55.7% of higher secondary students, and there are similar situations in Chhattisgarh (53.1%) and Tamil Nadu (51.2%). The State government adviser notes that this could partly be attributed to the Right to Education Act stipulating that students cannot be failed till Class 8. "Girls who make it to Class 9 are usually interested in studying, but some boys who make it to the secondary level and then fail simply drop out. There may also be higher pressure on poorer boys to earn a living," he says, warning that boys must not be allowed to slip through the cracks.



At the college level, although the female GER is higher than the male GER, the picture changes when looking at regional and discipline-wise data. For instance, women students make up only 42.5% of those enrolled in STEM subjects from undergraduate to Ph.D levels, and the challenge lies in encouraging more girls to opt for these disciplines. Adult literacy is also still a matter of concern, with only 64.63% of women who are literate, in comparison to 80.88% of men, according to the last Census data from 2011. This calls for steps to improve foundational literacy in schools as well as to take education to rural women to close the gender gap.

'TEACHING MENTAL WELL BEING WILL REDUCE SUICIDES'

A blueprint to stem suicides, the National Suicide Prevention Strategy, was launched in November 2022. The aim was to establish effective surveillance mechanisms for suicide within three years and establish psychiatric outpatient departments to provide suicide prevention services through the District Mental Health Programmes in all districts within the next five years. It called for integrating a mental well-being curriculum into all educational institutions within eight years. It also sought to develop guidelines for responsible media reporting of suicides and restrict access to the means for suicide.

Top killer

In India, more than 1 lakh lives are lost annually to suicide, and it is the top killer in the 15-29 years category. From 2019 to 2022, the suicide rate increased from 10.2 to 11.3 per 1,00,000.

The NSSP envisages a specific strategy for every state and district. "We have explained the strategy, who should implement it, and the cascading effect. The ministry of health, education, and agriculture in each state must have a task force. We have provided short-term, medium-term, and long-term goals. But two years later, nothing has happened," said Lakshmi Vijayakumar, who has been running a suicide prevention programme, Sneha, for four decades. The health department should take the lead, but other departments like fertilisers, chemicals, information and broadcasting should also be represented in the task force, she said. The education department should be included to promote emotional wellbeing.

Soumitra Pathare, Director for Centre for Mental Health Law and Policy, one of the framers blames lack of political will.

'Sense of fatality'

"There is a sense of fatality when we start talking about suicide prevention. 'We cannot completely eliminate suicides', is what we hear. Instead of saying prevention we must say reduction. Even a 20% drop in suicides would save 40,000 lives annually," he remarked. He also blamed the lack of will in the media to make conscientious efforts to educate themselves on reporting suicides. By talking about suicides we would be acknowledging the problem and try to find solutions, he reasoned.

Dr. Pathare and Dr. Lakshmi pointed out that it is likely the only health condition which claims 1.27 lakh lives but there is no government programme to prevent it. Dr. Pathare cited Tamil Nadu as an example where suicides had reduced thanks to supplementary examinations for school students. Yet the government has done nothing to implement NSPS. "The present approach is piecemeal. We need a district wise programme that can bring about consistent results," Dr. Pathare said. Dr. Lakshmi calls for several editions of competitive exams so youngsters gain confidence that they can appear whenever they want.



“The National Education Policy is good, but it has not been implemented. The vocational guidance programme and multiple exits, grade system, and the flexibility to make course changes are all good. But it has not been implemented,” she said.

Policy changes work

“I would like to emphasise that policy changes do make a difference and these policies are there and need to be implemented. Once implemented, we see results. And the example is Tamil Nadu. “Tie up NEP and NSPS, and by implementing the strategies deaths can be reduced,” she said.

Dheeraj Singh, an alumnus of the IIT Kanpur who mentors students from IITs, said: “Suicides can be prevented with timely supportive action. Citizens must learn the skills of identifying someone with suicidal thoughts, asking them openly about their thoughts, talking to them without fear, and referring them to a caregiver who can complete a safety plan and provide suicide prevention counselling. These steps, if taken with care person, can save many lives at risk.”

INDIA SUCCESSFULLY FLIGHT-TESTS PH-II BALLISTIC MISSILE DEFENCE SYSTEM

India Wednesday successfully flight tested Phase-II of Ballistic Missile Defence System off the Odisha coast.

— In a post on X, the Defence Research & Development Organisation (DRDO) said the missile was launched “meeting all the trial objectives validating complete network centric warfare weapon system consisting of LR sensors, low latency communication system and Advance Interceptor missiles”.

NISAR MISSING FROM ISRO’S PLAN, MISSION UNLIKELY THIS YEAR

The keenly-awaited NISAR space mission, a first of its kind collaborative exercise between the space agencies of India and the United States, it seems, will not happen this year. NISAR did not figure in the list of missions the Indian Space Research Organisation submitted to the Lok Sabha on Thursday in response to a question on space missions to be launched this year.

NISAR, which stands for NASA-ISRO Synthetic Aperture Radar, is designed to make extremely granular observations of the Earth at regular intervals. The satellite is powerful enough to capture changes as small as one centimetre in size during its repeated observations over the same terrain. It will therefore be able to study the dynamic processes happening on Earth’s surface, like retreat of glaciers, changes in vegetation and forest cover, and even the movements during earthquakes and volcanoes. Scientists expect this satellite to provide new insights into our understandings of processes like climate change or natural hazards.

NISAR was slated for a launch in the first half of this year, and the satellite, that had been put together in the United States after one of the two radars and some other components had been flown in from India, had been delivered to Bengaluru last year.

However, in further testing, one of the key components, a 12-metre large antenna, was discovered to be in need of some improvements. The spacecraft had to be shipped back to the United States earlier this year for the upgrade.



ISRO, in the meanwhile, had maintained that it was still hopeful for a launch in the second half of the year. The response to the Parliament question, however, shows that the launch might not be part of the plan this year.

It listed at least six missions that would be launched in the next five months, including the first unmanned flight under the Gaganyaan programme. The Spadex, or Space Docking Experiment, mission that will demonstrate ISRO's capability to join or assemble parts of a satellite in space is also expected to be launched. Spadex will lay the groundwork for ISRO's plans to build a permanent space station by 2030.

Docking is a process where two spacecrafts, both moving at extremely high speeds but not relative to each other, are aligned in a precise orbit and joined together — a capability necessary for joining different modules in space to create a space station. ISRO chairman S Somanath has previously said that this mission was likely by November or December.

A TDS-01 mission, that is meant to be technology demonstration for an electronic propulsion system designed by Institute for Plasma Research-Gandhinagar, would also be launched later this year, ISRO said.

Besides these, navigation satellite NVS-02, meant for the country's IRNSS constellation, will be carried by a GSLV rocket. ISRO plans to carry out a launch of the newly-introduced SSLV (Small Satellite Launch Vehicle) rocket as well.

PREVALENCE OF NCDS TRIPLED, INFECTIOUS DISEASES DOUBLED

A study published recently has looked at morbidity transition across States from 1995 to 2018. The study examines self-reported morbidities in India by relying on the 1995, 2004, 2014, and 2018 data of the National Sample Survey Organisation (NSSO). Large number of households were included in each survey—120,942 households in 1995, 73,868 households in 2004, 65,932 households in 2014, and 113,823 households in 2018. Multiple kinds of diseases and disabilities were collected in each NSSO survey, and the self-reported morbidities were classified into four broad categories — infectious and communicable diseases, non-communicable diseases, disability, and injury and other diseases. The study has been published in the journal PLOS ONE.

There has been a steady upsurge in morbidity prevalence — doubling from 56 per thousand population in 1995 to 106 per thousand population in 2014. However, there has been a considerable decline in 2018— 79 per thousand population. Compared with 1995, the reported morbidities risk transition significantly increased over successive decades — 1.81 times in 2004, 2.16 times in 2014, and 1.44 times in 2018. Across India, non-communicable diseases gained a prominent share in morbidity trends from 1995 to 2018, with Kerala reporting the highest rates followed by Andhra Pradesh, Karnataka, West Bengal and Punjab.

The study found that while the prevalence of all types of morbidities not only increased but actually doubled from 56 per thousand population in 1995 to 106 per thousand population in 2014 (and 95 per thousand population in 2004), there has been a sharp dip in 2018 when the morbidity dropped to 79 per thousand from 106 per thousand population in 2014. In the case of infectious and communicable diseases, non-communicable diseases, disability except injury and other diseases the decline started in 2004.

With a prevalence of 30 per thousand population in 2018, non-communicable diseases account for a major share of prevalence; it has increased more than three times from 8.6 per thousand



population in 1995. In the case of infectious and communicable diseases, the prevalence has almost doubled from 8 to 15 per thousand population in the past two decades.

“Kerala consistently stands out with the highest reported morbidity rates, recording figures of 112 per 1,000 population in 1995, 266 per 1,000 population in 2004, 370 per 1,000 population in 2014, and 294 per 1,000 population in 2018. Other States like Andhra Pradesh, West Bengal, Punjab, and others also exhibit noteworthy prevalence rates,” the authors write. “Conversely, the northern and eastern states, particularly Manipur, exhibit the lowest prevalence of morbidity conditions. In 1995, Manipur reported a mere seven cases per 1,000 individuals, which increased to 28 per 1,000 individuals in 2004, 29 per 1,000 individuals in 2014, and declined to 19 per 1,000 individuals in 2018.”

Kerala has reported the highest prevalence of non-communicable diseases — 118 per thousand individuals in 2004, 185 per thousand individuals in 2014, and 177 per thousand individuals in 2018, followed by Pondicherry, Andhra Pradesh, Goa, Tamil Nadu, and Punjab. The north-eastern States have reported the lowest prevalence of non-communicable diseases. For instance, Meghalaya reported just 1.7 per thousand individuals in 1995, two per thousand individuals in 2004, 1.4 per thousand individuals in 2014 and 0.2 per thousand individuals in 2018, followed by Nagaland, Assam, Manipur, Mizoram, Tripura, Arunachal Pradesh and Bihar. “Prevalence of non-communicable diseases has declined in several States in less than half a decade (2014 to 2018), but it is still sizably higher in numbers,” they note.

“As India undergoes concurrent demographic and epidemiological transitions, our study aligns with this dynamic shift. Notably, it highlights significant disparities in reporting morbidity burdens across different States from 1995 to 2018,” says Mahadev Bramhankar, a PhD scholar from the International Institute for Population Sciences (IIPS), Mumbai and the corresponding author of the paper.

“These variations are attributed to distinct demographic, social, and economic determinants characterising each State, contributing to the nuanced landscape of health challenges across the nation.”

Morbidity context

Many studies have discussed the epidemiological transition based on various aspects using demographic and morbidity data in India in the recent past. “But our study contributes additional insights by extending beyond a national perspective and conducting a meticulous analysis at the State level and determinants, especially in morbidity context,” Bramhankar says.

“The ageing population and rising life expectancy are concurrently fuelling the prevalence of non-communicable diseases without necessarily displacing existing infectious and communicable morbidities. Among all the morbidities over the period of disease transition from 1995 to 2018, non-communicable diseases are most predominantly gaining share,” he says.

GOVERNMENT SLASHES PRICES FOR TARGETED CANCER DRUGS: ALL YOU NEED TO KNOW

In her Budget 2024-25 speech on Tuesday, Finance Minister Nirmala Sitharaman announced customs duty exemptions on three targeted cancer drugs — trastuzumab deruxtecan, osimertinib, and durvalumab. Before the Budget announcement, the customs duty on these drugs stood at around 10%.



The decision is likely to make these drugs more accessible to Indian patients, and reduce the overall cost of cancer therapies.

Here is how the three medicines work, the impact of the government's decision, and the cancer profile of India.

First, what are targeted cancer drugs?

Targeted cancer drugs are designed to attack only the cancer cells, leaving the normal cells unaffected. They target specific genetic changes in cancer cells that help them grow, divide, and spread.

These drugs have better outcomes and fewer side effects compared to traditional chemotherapy drugs that indiscriminately target all cells.

Newer targeted cancer therapies such as immunotherapy do not target the cancer itself by using any drug. Instead, they train the patient's immune system to find and attack the cancer cells.

How do these three drugs work?

✂ Trastuzumab deruxtecan is an antibody-drug conjugate — a substance made up of a monoclonal antibody (a laboratory-made protein that acts like human antibodies) chemically linked to a drug. It is used to treat any cancer with HER-2 receptor (a protein that appears on the surface of some breast cancer cells) that has metastasised or cannot be operated on.

Developed by Daiichi Sankyo and marketed by Astrazeneca as Enhertu, trastuzumab deruxtecan is a second-line treatment, which is used when traditional therapies have failed.

In 2019, the drug was approved for the treatment of breast cancers, and, in 2021, for targeting certain types of gastrointestinal cancers.

Earlier this year, it became the first drug in its class to receive “tissue-agnostic approval” from the US Food and Drug Administration (FDA) — meaning it can be used to treat any cancer with HER-2 receptor regardless of where it originates.

Cost: The drug costs around Rs 1.6 lakh per vial.

✂ Osimertinib is the most commonly used of the three cancer drugs in India. Marketed as Tagrisso by AstraZeneca, the drug is used to treat lung cancers that have epidermal growth factor receptors (EGFR) — they are thought to be involved in the development of cancer. Osimertinib blocks these receptors on cancer cells, and stops the cancer from growing.

The drug can be prescribed after the tumour has been removed surgically, or even as a first-line treatment when the cancer has metastasised. The drug can be consumed till it fails and the cancer starts to progress again, or till there is a case of severe toxicity.

Dr Ankur Bahl, Senior Director of medical oncology at Fortis Gurugram, told The Indian Express: “Osimertinib has survival benefits over other available treatments as it can extend the life of cancer patients by four to five years”.

He also said osimertinib targets the mutation, which occurs in 25% to 30% of lung cancers in women who are non-smokers.



Cost: The drug, however, is quite expensive — it costs 1.5 lakh per strip of ten pills, and has to be taken every day.

✦ Durvalumab — an immunotherapy treatment — is used for the treatment of certain lung cancers, biliary tract cancers, bladder cancer, and liver cancer. It attaches itself to PD-L1 proteins — they are present on the surface of cancer cells, and help them escape immune detection — and allows the body's immune system to recognise cancer cells and kill them.

Studies have shown that patients on the drug remained in remission and live longer.

Cost: Sold as Imfinzi, durvalumab costs around Rs 1.5 lakh for every 10ml vial.

What will be the impact of the customs duty exemptions?

The customs duty exemptions on these drugs is widely expected to help reduce the financial burden on cancer patients and their families.

Speaking to The Indian Express, one cancer patient said even a Rs 12,000 drop in price would help them purchase more nutrition and protein supplements, and use the amount for other expenses such as tests and scans.

Dr Abhishek Shankar, oncologist at the All India Institute of Medical Sciences (AIIMS) in New Delhi, said, "This is a positive move from the government. These drugs cost up to lakhs, and even a small percentage decrease will make a significant difference to patients and their families. They are targeted therapies that offer much better results than traditional therapies."

He also said that in India, around one lakh patients need rastuzumab deruxtecan, osimertinib, and durvalumab.

What is the cancer profile in India?

The number of cancer cases is rising in India. An estimated 14.6 lakh new cancer cases were detected in 2022, up from 14.2 lakh in 2021, and 13.9 lakh in 2020, according to the National Cancer Registry data. The number of deaths due to cancer increased to an estimated 8.08 lakh in 2022, up from 7.9 lakh in 2021, and 7.7 lakh in 2020.

The incidence of cancer is higher among women — 103.6 per 100,000 population in 2020 — compared to 94.1 among men. Among men, the most common cancers were of the lung, mouth, prostate, tongue, and stomach; for women, they were breast, cervix, ovary, uterus, and lung.

The therapies that will become cheaper are useful for the treatment of lung and breast cancers, which are among the most common cancers in men and women, respectively.

One in nine Indians will develop cancer during their lifetime, according to an Indian Council of Medical Research (ICMR) study, which used data from population-based cancer registries. One in 68 men will develop lung cancer, and one in 29 women will develop breast cancer, the study said.

HOW A KERALA TEEN BECAME THE FIRST INDIAN TO SURVIVE A DEADLY BRAIN-EATING AMOEBA DISEASE

Last week, 14-year-old Afnan Jasim from Kozhikode became one of only 11 people in the world to have survived Primary Amoebic Meningoencephalitis



This is the story of the boy who lived.

Last week, 14-year-old Afanan Jasim from Thikkodi in Kerala's Kozhikode district became one of only 11 people in the world — and the first Indian — to have survived the deadly Primary Amoebic Meningoencephalitis (PAM), a brain-eating amoeba disease with a fatality rate of 97 per cent.

PAM is caused by *Naegleria fowleri*, an amoeba found in soil and freshwater such as lakes, rivers, and ponds, as well as untreated swimming pools. According to the US Centers for Disease Control and Prevention (CDC), "Most people with PAM die within 1 to 18 days after symptoms begin. It usually leads to coma and death after 5 days."

Typically, amoeba enters the body through the nose and, without early intervention, progresses rapidly. Although the disease is suspected to have been around for at least a century — with the first suspected case in Britain in 1909 — Kerala recorded its first case in 2016.

The state has recorded five cases in the last two months alone.

For Afanan, too, it all began with a swim that Afanan, a Class 10 student, had with his friends at a local pond on June 26. Four days later, he began to show symptoms. First came the headaches. By afternoon on June 30, it had progressed to epileptic-like seizures and fever, prompting his father M K Siddique to take him to a private hospital in Payyoli.

"While scrolling through social media, I came across news about a brain-eating amoeba and how children swimming in ponds were getting infected. Kerala already had a few such cases. Also, no one in the family has any history of epilepsy. So I told the doctor that my son swam in a local pond four days ago, the doctor took note," Siddique, a daily wager, tells The Indian Express.

The same night, Afanan was referred to another hospital in the nearby Vadakara city. But since there was no paediatric consultant, the family went to Baby Memorial Hospital (BMH), a private hospital in Kozhikode, 47 km from the village.

BMH's Paediatric Intensive Care Specialist Dr. Abdul Rauf examined Afanan and immediately took him to run some tests. The hospital had already seen two cases of amoebic meningoencephalitis — one of whom was still undergoing treatment at the hospital.

"The child's symptoms and the fact that he went for a swim in a pond pointed to PAM. We started the treatment immediately," he said.

Their suspicions were confirmed in 24 hours through a PCR test. Then came the most trying time.

"On the day the disease was confirmed, the doctor gave us counselling and told us about its fatality rate. Our world had been upended. He's our only son and I feared he was on the verge of death," he said.

Meanwhile, with one PAM patient already critical at BMH, the Kerala government had already begun trying to procure Miltefosine — one of the drugs approved for treating PAM. Originally developed in the 1980s as an anti-cancer agent, Miltefosine is a broad-spectrum antimicrobial, anti-leishmanial, phospholipid drug.

According to Dr Rauf, the medicine is not easily available in India and had to be brought in from Germany.



On July 4 — before the drug could be administered — 12-year-old E P Mridul, the other child undergoing treatment for PAM at BMH, breathed his last. This event magnified fears for Afanan's life: for nine days, Siddique and his wife Rayhanath would wait outside the hospital's intensive care unit, praying for their son's recovery.

"Doctors and nurses tried to assuage our fears by saying we'd caught the disease in the initial stages. But the fact that we knew nobody survived this disease didn't help," he says.

According to Dr Rauf, it was the parents' quick thinking that helped make an early intervention in Afanan's case.

"Within 24 hours, Afanan developed symptoms, so we could diagnose the disease and start treatment. Compared to other types of meningitis, the disease progresses very rapidly and the patient's health worsens within 2-3 days. So, early diagnosis is the key to saving a PAM patient. The disease also has very few recoveries," he says, adding that a combination of five drugs are used for treating PAM.

It wasn't until he left the hospital on July 22 that Afnan understood the enormity of his survival. By then, he had been in the hospital for 22 days.

"I was never told about my problem. It was only on the day I was discharged from the hospital that I was informed about the gravity of the disease. My parents told me that the treatment was for epilepsy," he says.

According to Kerala Health Minister Veena George, the disease was detected chiefly due to the robust diagnosis system that was in place in the state.

"We have a standing instruction to all hospitals in the state, both government and private, to put all encephalitis cases under close surveillance. The first case in Kerala was reported in 2016 and with repeated cases in 2024, this disease has become a concern. However, now there is early diagnosis, which is important for saving patients," she says.

According to the minister, the state health department is planning a study on why the PAM cases are recurring in Kerala in association with the Indian Council of Medical Research (ICMR).

"We already had a discussion with the ICMR about this. Such a study will help create literature on this disease and benefit the medical fraternity in the world," she says.

60 µG/L URANIUM IN DRINKING WATER SAFE: STUDY

A new study by scientists from the Bhabha Atomic Research Centre (BARC) has concluded that concentration of uranium, a radioactive substance, up to 60 micrograms per litre (millionth of a gram per litre or µg/l) in drinking water was entirely safe, suggesting that the recently formulated "more stringent" national standard of 30 µg/l could be counterproductive.

— For years, the acceptable level of uranium concentration in drinking water in India was 60 µg/l — set by the country's nuclear safety watchdog, Atomic Energy Regulatory Board (AERB). In 2021, the Bureau of Indian Standards (BIS), the custodian of standards and quality in India, however, announced a new limit of 30 µg/l, in line with recommendations of the World Health Organization (WHO).



— The BARC study, meanwhile, cited several medical researches, including those conducted by the WHO, to argue that small concentrations of uranium in drinking water pose no threat.

— “The WHO has recently concluded that there is no evidence of a correlation between the natural levels of uranium in drinking water and a carcinogenic effect... it emphasised that there is no proof associating uranium in drinking water with a cancer risk.” the study said.

— According to the researchers, the WHO’s standards of uranium concentration in drinking water — 30 µg/l — were mere guidelines, and not a recommended safety limit.

— Finland and Slovakia — two nations with considerable amounts of uranium consumption — have prescribed safety limits of 100 and 350 µg/l respectively; another uranium-rich country, South Africa, has a limit of 70 µg/l. The limits in countries like Canada and Australia that have the largest deposits of uranium among others, however, are 20 and 15 µg/l, respectively. Germany, which does not have uranium, has even lower limits.

— According to the BARC study, in the absence of any evidence of adverse health impacts at such small concentrations, considerations like geological (prevalence of uranium) and socio-economic conditions, and population dynamics must also be taken into account while deciding on national standards on uranium contamination.

‘NEED MORE FOCUS ON PM 2.5’: STUDY SAYS DUST MITIGATION DRAINING CLEAN AIR SCHEME FUNDS

Road dust mitigation works undertaken to reduce particulate matter 10 (PM10) pollution is draining a lion’s share — 64% — of funds under the National Clean Air Programme (NCAP), said a new study by Centre for Science and Environment (CSE) while recommending a shift of focus on curbing the finer, more lethal PM2.5 pollution.

— The CSE report has appraised efforts to curb air pollution under the national scheme through the lens of fund utilisation, city level performance in improving air quality and implementation gaps.

— The heavy focus on PM10 pollution under NCAP has meant that road paving and widening, pothole repairs, water sprinkling, procurement of mechanised sweepers has accounted for a dominant share in the expenditure under NCAP, the report said.

— A review of the sectoral patterns showed that 64 per cent of the total funds went into road dust mitigation while only 12.63 per cent and 14.51 per cent funds were spent on combustion sources of pollution like vehicles and biomass burning, respectively. A mere 0.61 per cent was spent on industrial pollution control.

— The National Green Tribunal (NGT) is also scrutinising the national scheme in a suo matter is appraising expenditure under NCAP across 53 cities.

For Your Information:

— India’s National Clean Air Programme (NCAP) was launched in 2019 to achieve a 20-30 per cent reduction in concentrations of PM10 and PM2.5 by 2024 (base year, 2017). It encompasses a wide range of specific interventions including reduction of vehicular pollution through regulatory norms, promotion of public transport and improvements in roads and bridges; tackling industrial emissions; notification of eight waste management rules, etc.

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



— PM 2.5 and PM 10 are extremely fine particulate matter (PM) particles, with the digits accompanying them referring to their diameter. So, PM 10 and PM 2.5 are smaller than 10 and 2.5 microns in their diameter, respectively. One micron is about a thousandth of a millimetre and this tiny size has a role to play in how they impact human health. The finer the particles are, the more difficult it gets to protect oneself from them.

—Due to their size, the PM 2.5 particles can easily bypass the nose and throat and can enter the circulatory system. The particles can also lead to chronic diseases such as asthma, heart attack, bronchitis and other respiratory problems. Byproducts of emissions from factories, vehicular pollution, construction activities and road dust, such particles are not dispersed and stay suspended in the air that we breathe.

HOW CHILDREN WIN WITH U-WIN, GOVT'S NEW ONLINE VACCINE PORTAL

On the government's 100-day health agenda is the countrywide rollout of U-WIN, an online vaccine management portal for childhood vaccination — similar to CoWIN used during the Covid-19 pandemic.

— With digitised and individualised immunisation records since birth, the government hopes to identify and reach the small proportion of children currently outside its vaccine net. The platform is already being piloted in several states, and national implementation is imminent.

— Children, up to the age of six years, and pregnant mothers are registered on U-WIN using government ID like Aadhaar, and their mobile phone numbers. Upon registration, records of all 25 shots given to a child — and the two given to pregnant mothers — can be added.

— U-WIN also registers all births, the three vaccines against polio, hepatitis B, and tuberculosis administered at birth, a child's birth weight, and any physical deformities observed at birth. These data-points can be utilised by other government programmes as well — the idea is to eventually connect all digital records through ABHA (Ayushman Bharat Health Account) ID.

— U-WIN will also be linked to the government's existing eVIN platform for inventory management. eVIN tracks all vaccine vials, from large central stores to each vaccination site in the country. It keeps track of the number of doses used, the number of doses that go to waste, and the number of open vials that are submitted back by the sites, and is used by sites to raise demands for vaccines.

IS THERE A RIGHT WAY TO PORTRAY SEXUAL VIOLENCE ON-SCREEN?

There is no doubt today, with a war and a horrific occupation in place, it is clear that we, as a race, are essentially ensconced in violence. Aggression over pacifism and bloodthirst over compassion seem to be the guiding forces of our times. As the world loses patience and continues to aggress, art that imitates life, or speculates on it, naturally needs to reflect a part of that. Is it okay to show violence on screen then, to show rape that is probably the most brutal of violations, physical and emotional, on-screen? The debate has raged and crude and cruder forms of the depiction of violence have dominated screen time and mind space since man figured out how to shoot films and run them on a spool for public viewing. The question always is how much is too much? And, a little more philosophically, does this portrayal have to make a point?



'Casual approach to violence'

More recently, Vijay Sethupathy's flick *Maharaja* set the cash registers ringing with a rather contrived revenge drama, gimmicky and replete with non-linear time zones. While redeemed much by the protagonist's fine essay of a broken father, the brutal violence in the film prompts a visceral physical flinch many a time.

The blood, gore, and casual approach to violence makes one wonder if an assault is actually a living, bile-belching character in the movie. Not to spoil the story for you, but if you shrivel at the portrayal of physical violence on screen, then be warned that there is also more than one rape in the movie, not even as a revenge play, but just as mentioned before, nearly casual, flick of the wrist; we-can-do-this, therefore-we-will level of numbing.

As a cinematic ploy, it is meant to drive the plot in this film, and as such, stressed upon in entropic flashbacks, suggestive and lascivious facial expressions, post-coital adjustment of clothes, struggles, partial nudity, screams and violence. There is one particularly brutal scene, in another flashback, where the abuser spits on the child victim with such violence, it is definitely a bilious moment in the film. Of course, it further deteriorates into a spiral of more violence, bloodshed and a climatic ending that by then the audience is hoping for, has predicted, or has whispered as a prayer to let the movie end as a relief.

Big influence

It has been adequately established with studies that violent behaviour on screen further spurs violence, particularly among kids. Psychologist Albert Bandura established this way back in the sixties, showing that the more aggressive a film is, the more aggressive children watching it behave.

Other studies have also shown that violence has another way of allowing the practice of it in society, by desensitising the viewer. Desensitisation ensures that response to violence in real life is dulled or dead, allowing it to continue, or worse still, aggrandising it. Violence on-screen has seldom been the agent of change that filmmakers are sometimes deluded into thinking it is.

That very emperor of violence on screen, Quentin Tarantino, packs in a comical element and works in an element of theatrical distance between the screen and the audience in his movies. In a press conference in 1994, he said: "Violence is just one of many things you can do in movies. People ask me, 'Where does all this violence come from in your movies?' I say, 'Where does all this dancing come from in Stanley Donen movies?' If you ask me how I feel about violence in real life, well, I have a lot of feelings about it. It's one of the worst aspects of America. In movies, violence is cool. I like it."

While violence as an aspect of life has an undeniable place on screen, we don't want to watch just romcoms on the big screen or small. It is violence sans stylisation in movies, without the opportunity for redemption, that is problematic. One of the finest scenes of rape on screen is from the Netflix series *Sandman*, in the episode *Calliope*.

In the season finale episode, an out-of-inspiration author on a deadline is bequeathed a mythical Muse, by another author, and he pleads with her to inspire him. She has been imprisoned for decades against her will, and his pleas turn insistent and into demands. In one scene we realise, as he is furiously typing away on his manuscript, a small bleeding scratch on his face, that he has



had his way with her. Unusual for a rape scene, and with none of its usual trappings, but powerful nonetheless and conveys the message forcefully.

In another recent streaming series, *I May Destroy You*, there are multiple ways, subtle and gross, in which sexual violation is portrayed, and the response to it by the system, putting out the message that consent is key in any sexual relationship, and that it may be withdrawn at any time.

Educate, not glorify

Show violence on screen, since we must, to keep our movies real and earthy, but adding mindless violence under the garb of advancing the plot, serves no purpose, even eroding plausibility. You could always adapt a more sensitive, rights approach, and stylise the portrayal in a way that will not glorify violence, but rather serve to enlighten and educate the audience.

INDIA'S ILLEGAL COAL MINING PROBLEM

The story so far:

On July 13, three workers died of asphyxiation inside an illegal coal mine in Gujarat's Surendranagar district. The officials said that the workers were working in a mine near Bhet village in Thangadh taluka without helmets, masks, or other safety equipment. The first information report (FIR) indicated that the accused failed to provide essential safety gear to the labourers, who died after inhaling toxic gas in the mine. The police have registered a case of culpable homicide not amounting to murder against four people.

What is the issue?

The Surendranagar incident is not an isolated case.

In June 2023, three people, including a ten-year-old child, were reportedly killed after an illegal mine collapsed in the Dhanbad district of Jharkhand. Similarly, at least three people were killed in October 2023 after a coal mine collapsed during illegal extraction in West Bengal's Paschim Bardhaman district.

These are just a few examples of how illegal coal mining has led to worker fatalities in India.

Coal in India was nationalised in two phases: first with the coking coal (used for the production of coke in the steel industry) in 1971-72; and then with the non-coking coal mines in 1973. The Coal Mines (Nationalisation) Act, 1973 is the central legislation that determines eligibility for coal mining in India. Illegal mining constitutes a law and order problem, which is a State list subject. Hence, the onus of dealing with it falls on State governments rather than the Union government.

Why is illegal coal mining rampant in India?

According to the Ministry of Coal, illegal mining in India is mostly carried out in abandoned mines or shallow coal seams in remote or isolated places. Several factors contribute to illegal coal mining in India.

Coal is the most abundant fossil fuel in India, accounting for 55% of the country's energy needs. The high demand for power in India translates into a high demand for coal, which often outstrips the legal supply, prompting illegal supply. Many areas that are rich in coal are also situated close



to homes for populations struggling with poverty and unemployment, which contributes to illegal mining in these areas.

In remote areas, mining regulations can be weak due to inadequate monitoring and lack of resources, leading to weaker enforcement. This can result in the rise of “coal mafias,” as has been alleged in multiple cases of illegal coal mining in India. For example, in 2018, activist Marshall Biam of the North East Indigenous People’s Federation registered a complaint accusing a “police-backed” coal gang of threatening him. Mining tragedies are not uncommon in coal-rich Meghalaya.

Illegal coal mining also allegedly receives tacit support from political leaders in areas where it is prevalent, making it difficult to curb. In 2023, the Assam-based political party Assam Jatiya Parishad (AJP) submitted a petition each to the President, Vice-President, Prime Minister, Chief Justice of India, the National Green Tribunal (NGT), the National Human Rights Commission and the Leader of the Opposition in the Rajya Sabha, alleging that some BJP leaders are behind illegal coal mining in the State. AJP president Lurinjyoti Gogoi and general secretary Jagadish Bhuyan said that illegal rat-hole coal mining has continued in Assam, as well as in Meghalaya and other north-eastern States, with the alleged patronage of BJP leaders and in collusion with officials despite a blanket ban on such mining by the NGT in 2014.

Illegal mining is often carried out using rudimentary techniques like surface mining and rat-hole mining, rather than the scientific methods required for legal operations on a larger scale. In areas where coal seams are closer to the surface, illegal miners access them with limited safety equipment. Minimal operational costs can also turn into significant profits, making illegal mining lucrative.

Why do so many workers die in illegal coal mines?

The lack of safety equipment and protocols is the primary reason for deaths during illegal coal mining. Miners face increased respiratory risks due to inhaling coal dust, and the lack of safety equipment significantly increases this risk. The miners in the Surendranagar incident also died of carbon monoxide poisoning. According to District Collector K.C. Sampat, 2,100 wells had been filled in recent times, but some of them might have been illegally reopened, where the incident happened.

Illegal mines lack proper structural support to carry out the extraction of coal, making working conditions hazardous and vulnerable to cave-ins, landslides, and explosions. Workers may also be exposed to high levels of toxic substances like lead and mercury, which can cause acute poisoning or long-term chronic medical conditions.

Several people who work in illegal coal mines are untrained for the job and for the risks it poses. There is a lack of proper training, quick response facilities, and knowledge in case of emergencies.

Operator negligence and worker exploitation are also rampant in illegal coal mining.

Why do governments struggle to cut down illegal coal mining in India?

Questions regarding illegal coal mining have been raised in the Parliament, but since it is a law and order issue, the Union government often shifts the blame to State authorities. A mix of economic, social, political, and regulatory factors makes it difficult for governments to shut down illegal coal mining in India.



Illegal coal mining, by any means, is not a novelty. It has existed since before coal was nationalised and continues to exist in pockets in coal-rich areas or near abandoned mines. The high demand for coal as a fuel makes illegal mining rampant and challenging to control. Local economies in many areas depend on mining, and once official operations run their course, illegal mining takes its place to support the local community.

The legal framework governing mining is complex, which can possibly lead to bureaucratic hurdles and inefficiency in governance, allowing illegal mining to exist.

SHOCK-PROOF STATE

A bright light fell on the extent of the world's dependence on information technologies when on July 19, supermarkets, banks, hospitals, airports, and many other services in between suffered a simultaneous blackout after a common software solution they used glitched. Between then and the time at which the solution's developers rolled out a fix, news of the problem and the resulting downtime spread around the world through the same networks that have been erected to facilitate communications between these systems. Technological advancements are inevitable and desirable, but the concurrent responsibility to set up failsafes and emergency protocols is often less glamorous. These gaps are exacerbated in societies where the adoption of new technologies is concentrated in sectors competing in the global market and in piecemeal fashion vis-à-vis services provided in local markets. Thus, for example, the glitch may have caused an airline operator to suffer greater monetary losses but it would have been more debilitating for cardiac facilities at a tertiary care centre, or a computer trying to access a thermal power facility during peak demand.

Such glitches are more common than people realise thanks to otherwise trivial process- or business-level failures. The focus must instead be on the network interconnections that allow these technologies to be useful and the implementation of life-saving redundancies. Unfortunately, unlike most other technological enterprises, information technologies are yet to develop a mature self-awareness of their pansocial character and the impetus to adjust for this rudiment lies with the state. This requires a 'Digital India' push that is cognisant of software solutions' relationship with digital privacy and data sovereignty, layered over the challenges that income inequality and political marginalisation impose on communities navigating more socially interconnected settings. For example, public distrust in electronic voting machines, stoked by an incomplete understanding of software security among the political class, the judiciary, and civil society, could have been restored with open-source software and modes of integrity testing that violate neither physical nor digital property rights. The July 19 outage offers a similar opportunity: to rejig the software that public sector institutions need to provide their essential services and to incorporate redundancies, including moving away from single-vendor policies, that preserve the links between these institutions and people engaged in informal economies in the event of a network-level outage. The state was previously duty-bound to develop democratic digital infrastructure. Now, cognisant of more powerful interlinks among social, economic, and cultural realities, it is also duty-bound to ensure that this infrastructure is shock-proof.

GRASSLANDS IN KUTCH LIKELY TO HOST CHEETAHS FROM AFRICA

Some of the next batch of cheetahs being brought in from Africa, as part of the next phase of Project Cheetah, may be sent to a cheetah-breeding and conservation centre being built in the sprawling



grasslands of Banni in the Rann of Kutch in Gujarat, senior officials in the Environment Ministry told The Hindu.

While the Gandhi Sagar sanctuary in Madhya Pradesh is the preferred location for the next lot of wild cats, with Banni being considered a potential habitat for over a decade, officials say there is a surge in activity to set up basic infrastructure in Banni and get it ready this year.

“The next [lot of] animals will go to Gandhi Sagar. However, the Gujarat government is setting up suitable enclosures in Banni where cheetahs can be bred. If all goes to plan, there is no reason (the site) cannot be readied in the next six months and some animals sent there,” an official told The Hindu.

Banni is a vast grassland in the southern part of Kutch and extends to nearly 3,500 square kilometres. While that is plenty of space, more than that available in Kuno and Gandhi Sagar, there is barely enough prey to sustain a viable population.

Antelope species such as chinkara and blackbuck — the prey for the cheetah — are present in the Banni landscape but not enough for the big cat. “It will take years for enough prey, and practically this means chital — the main prey for the cheetahs in India — needs to be brought into these grasslands. There isn’t an official plan yet but it is a site that is under consideration,” the official added.

While the Madhya Pradesh Forest Department is tasked with managing the cheetahs at Kuno in Madhya Pradesh, an expert steering committee gives scientific input on managing the programme. This includes recommending future sites for introducing fresh batches of cheetahs at regular intervals.

Of the 20 adult cheetahs brought to Kuno since September 2022, 13 survive. Additionally there are 13 cubs, making it 26 animals overall. However, the maximum capacity (in terms of available prey) of the Kuno reserve is for 21 adult animals.

The government’s estimate is that India will need to import anywhere between 10 and 12 adult cheetahs every year for the next five years to groom a sustainable breeding population. “One attractive aspect of Banni is that there are no leopards. So with enough prey, we can overtime sustain a larger population. But this is a long-term plan,” an official said.

In October, all of the cheetahs in Kuno are expected to be released into the wild. Currently, most of them are in the bomas, or large enclosures that are a kilometre wide and long. These animals were brought in after infections and acclimatisation problems led to fatalities. Following the release of all the animals into the wild, preparations for the next batch are expected to begin — again from South Africa and Namibia.

HARAPPAN SOCIETY IS ‘SINDHU-SARASVATI CIVILISATION’ IN NCERT’S NEW SOCIAL SCIENCE TEXTBOOK FOR CLASS 6

From referring to the Harappan civilisation as the ‘Sindhu-Sarasvati’ and ‘Indus-Sarasvati’ civilisation, to multiple mentions of the ‘Sarasvati’ river, including noting its desiccation as one of the reasons for the decline of the Harappan society, to a mention of India having had a “prime meridian of its own” called the ‘Ujjayini meridian’ — the new NCERT Class 6 Social Science textbook released on Friday incorporates many new elements.



— In a departure from the past, the textbook makes multiple references to the ‘Sarasvati’ river in the chapter pertaining to the beginning of Indian civilisation. The old History textbook, ‘Our Past I’, mentioned the river only once in a section on the Rig Veda, where it is included among the rivers named in the hymns in the Vedas.

— In the new textbook, the river finds a prominent place in a chapter on the ‘Beginnings of Indian Civilisation’, where the Harappan civilisation is referred to as the ‘Indus-Sarasvati’ or ‘Sindhu-Sarasvati’ civilisation. It says the ‘Sarasvati’ basin included major cities of the civilisation — Rakhigarhi and Ganweriwala — along with smaller cities and towns.

— The river, according to the new textbook, “today goes by the name of ‘Ghaggar’ in India and ‘Hakra’ in Pakistan (hence the name ‘Ghaggar-Hakra River’)”, and is now seasonal. In two maps in the book — one that marks out some of the rivers of the sub-continent, and another showing the main settlements of the ‘Indus-Sarasvati civilisation’ — the river has been marked out along with the Indus and its tributaries.

— The river also plays a key role in a section on how the **Harappan civilisation** declined. It says that two factors are agreed upon: one is “climate change” which caused reduced rainfall, and the other is that the “Sarasvati river dried up in its central basin; suddenly, cities there, such as Kalibangan or Banawali, were abandoned”.

WORLD NEEDS TO SEE INDIA WITHOUT PREJUDICE: PM

Prime Minister Narendra Modi was talking about the recent archaeological findings in **Uttar Pradesh’s Sinauli, where the remains of a 4000-year-old horse drawn carriage were discovered by the Archaeological Survey of India**, corresponding to Vedic period, rather than the Indus Valley civilisation.

— “As new facts are coming to light, as history is getting scientifically and technologically verified, we have to develop new perspectives to see history),” the Prime Minister said, addressing the gathering at the opening of the 46th session of the World Heritage Committee (WHC) at the Bharat Mandapam here.

— While the Western scholars proposed that chariots and weapons came to India with the Aryan invasion, ASI says the Sinauli excavation shows evidence of burials of warriors, weapons and chariots which is indigenous in nature.

— The World Heritage Committee meets annually and is responsible for managing all matters on World Heritage and deciding on sites to be inscribed on the World Heritage list. India is hosting the WHC Meeting for the first time.

For Your Information:

— India is hosting the 46th World Heritage Committee Meeting for the first time at Bharat Mandapam in New Delhi.

— It is being organized by the Archaeological Survey of India (ASI) on behalf of the Ministry of Culture.

—The logo of the meeting is inspired by the World Heritage Site of Hampi.



— The tagline of the logo is सह नौ यशः, which means “May our Glory Grow” in English. The tagline has been derived from the ancient Sanskrit scripture ‘Taittiriya Upanishad’, which is a testament to our ancestors’ wish for growth for one and all.

ROYAL BURIAL MOUNDS OF THE AHOM DYNASTY FROM ASSAM MAKE IT TO UNESCO WORLD HERITAGE LIST

The Charaideo Moidams, a 700-year-old mound-burial system of the Ahom dynasty from Assam, were added to the UNESCO World Heritage List on Friday, making them the 43rd property from India to be included in the prestigious index.

The announcement was made at the 46th session of the World Heritage Committee being held here.

“This historic recognition brings global attention to the unique 700-year-old mound-burial system of the Ahom kings at Charaideo, highlighting the rich cultural heritage of Assam and Bharat,” Union Minister for Culture and Tourism Gajendra Singh Shekhawat told the media after the announcement.

Similar to the pyramids of Egypt, the Moidams are earthen burial mounds of the members of the Ahom royalty whose 600-year rule was ended by the British takeover of the region.

The Ahoms adopted the Hindu method of cremation after the 18th century and began entombing the cremated bones and ashes in a Moidam at Charaideo.

The highly venerated Moidams make the Charaideo district a tourist destination.

First from Northeast

The Moidams are the first from the northeastern States to be recognised as a World Heritage Site in the cultural category. Assam has two other such sites in the natural category – Kaziranga National Park and Manas National Park, both upgraded to tiger reserves.

“THIS IS HUGE. The Moidams make it to the #UNESCO World Heritage list under the category Cultural Property – a great win for Assam. Thank You Hon’ble Prime Minister Shri @narendramodi ji, Members of the @UNESCO World Heritage Committee and to the people of Assam,” Chief Minister Himanta Biswa Sarma wrote on X.

He said the Charaideo Moidam embodies the deep spiritual belief, rich civilisational heritage, and architectural prowess of Assam’s Tai-Ahom community.

The Moidams were nominated as India’s official entry in 2023.

Of the 386 Moidams explored so far, 90 royal burials at Charaideo are the best preserved, representative, and most complete examples of this tradition.

INDIA, US SIGN CULTURAL PROPERTY PACT ON RETURN OF SMUGGLED ANTIQUITIES

India and the US signed a bilateral cultural property agreement Friday to facilitate the return of stolen and smuggled antiquities, many of which find their way to the US.



— The agreement was signed by US Ambassador to India Eric Garcetti and Culture Secretary Govind Mohan, on the sidelines of the UNESCO World Heritage Committee meeting in New Delhi.

— “This is about two things. First and foremost, it’s about justice – returning to India and to Indians, what is rightfully theirs. Secondly, it’s about connecting India with the world. To know Indian culture is to know human culture,” Garcetti said.

— With this agreement, India joins the ranks of 29 existing US bilateral cultural property agreement partners. The US has 28 active bilateral cultural property agreements including with Afghanistan, China, Cambodia, Egypt, Greece, Italy, Jordan and Turkey.

— According to government data, over 400 antiquities have been brought back to India since 2014.

For Your Information:

— The 1970 UNESCO Convention enjoins upon all the signatories to voluntarily return all the artefacts that have either been taken there due to colonial plunder or post-colonial misappropriation through smuggling, theft or other such means.

MIGRATION OF GENES AND LANGUAGES

All humans originated in Africa. The First Indians were part of the Out of Africa migration that took place 60,000 years ago.

Before that, there were many unsuccessful migrations of human-like creatures, which is why we find 150,000-year-old stone tools in Tamil Nadu. The Narmada skull is even older, from 1.8 million to 200,000 years ago, belonging to those who preceded modern Homo sapiens.

But it was 60,000 years ago that modern humans first came to India and travelled along the sea-coast down to Southeast Asia. These early people probably used retroflex sounds (र ङ ड ढ ण ळ) while speaking, which we still use in India today. The same sounds can be heard amongst Australian aborigines even today. You do not find these sounds in the rest of the world anymore.

Major migrations in India

We need to separate migration from travelling — monks, merchants, etc. Migration is related to finding a new home. For example, the Parsi community migrated to India from Iran about a thousand years ago to escape religious persecution.

People migrate for economic reasons, seeking job opportunities, or for political reasons, to avoid threats. When there is a shift in population, people change. With marriage, language and culture change.

The next major migration into India happened 10,000 years ago with ancestors of the Iranian farmers crossing the Hindu Kush mountains and sparking the agricultural revolution in the Indus Valley.

They grew barley and wheat, herded goats and sheep. Locally, people domesticated water buffalo and the humped ‘zebu’ bull. From here, over 4,500 years ago, the Harappan Civilisation flourished.



The Harappan people spread in a Z-pattern, first west towards the Ganga river valley, then east along Narmada and then south along the western coast.

Genetics and Indo-European migrations

From genetic studies we know that a new group entered India around 3,800 years ago — the Indo-Europeans, who originally came from the Steppes, north of the Caspian Sea. These people took domesticated horses with them to Europe and to Central Asia.

In Central Asia, this group split up again, one part moving towards India, the other towards Iran. Largely men, they brought in a new technology — chariots — and a new language — Sanskrit.

This grammar is very different from the grammar of Dravidian languages spoken in South India. South India saw the migration of Harappan people nearly 4,000 years ago.

One indication of the presence of the Steppe pastoral gene is the ability to digest milk well into adulthood. Adults in North and West of India have the ability to digest milk. The milk-digesting lactase enzyme found in all children persists into adulthood.

But many adults in the East and South of India cannot do so. This indicates the absence of the Steppe pastoral gene. Some refer to the Steppe pastoral gene as the Aryan gene, but this stirs too many emotions.

Some other migrations

There was also a migration that came from the East — the Austro-Asiatic ‘Munda’ people who brought in wet-rice farming with them from Southeast Asia (Vietnam).

Even today, there is a genetic variation between East (Magadha region) and West (Maharashtra region), with more Munda genes in the East and more Steppe genes in the West. The languages, too, are different. For example, in Hindi, verbs are gendered (मैं आता हूँ, मैं आती हूँ). In Bengali and Odia, it isn't.

Many migrations took place after this. From 300 BC to 300 AD, it was the Greeks (Yavanas), the Scythians (Sakas), the Parthians (Pallavas), and the Kushanas. After the 10th century, it was the Turks and Afghans. They were all from people of a similar genetic makeup, so when they migrate we do not find a stark shift in the genetics, but there is a remarkable shift in the culture.

Language

Around 300 BC, the court language was Prakrit. After 500 AD, the court language became Sanskrit. After 1200 AD, the court language became Persian (Farsi). After 1800, the official language became English. Since 1947, there have been efforts to make Hindi the dominant official language, but every state in India has its own official language.

We see a domination of North India, especially Hindi, over the rest of India simply because the fertile Ganga river basin is home to nearly 50% of India's population. This was the home of Vedic culture, which they migrated out beyond the Vindhyas, about 2000 years ago. But that is another story.



MUGHAL-ERA COINS, HELMET THAT DOUBLED AS COOKING VESSEL DURING EMPEROR'S EXILE: WHAT'S INSIDE HUMAYUN'S TOMB MUSEUM

Did you know that Humayun travelled three times more than Marco Polo, the famed explorer, covering 34,000 kilometers in his life? Or that he was so obsessed with astronomy and astrology that he wore a specific colour each day of the week to align with the planet of the day? Or that he was so fond of books that he used to carry his libraries on camelbacks during his travels?

Such fascinating nuggets about the life of the second Mughal Emperor and more will be highlighted as the long-awaited Humayun's Tomb World Heritage Site Museum, situated between Sunder Nursery and Humayun's Tomb in Nizamuddin, will be inaugurated on July 29.

"For every world heritage site, UNESCO recommends a center for historical and cultural knowledge. Visitors quickly realise that this is not just a tomb and often end up visiting all the heritage sites in the area. The idea is to promote tourism and help people understand this place and its history better," explained Ratish Nanda, the project director for the museum.

The museum, managed by the Archaeological Survey of India (ASI), is part of a larger conservation effort encompassing the 300-acre Humayun's Tomb-Sunder Nursery-Nizamuddin Basti area of Delhi.

Upon entering the museum, visitors are greeted with a 40-feet-wide 3D illustration and architectural models highlighting World Heritage monuments along the Yamuna River.

At the entrance, a wall features a map detailing Delhi's 2,500-year history, illustrating its seven ancient cities. Designed like a baoli (stepwell), the museum building is set underground. It includes a 100-seat auditorium, temporary galleries, cafés, meeting rooms, and a library. "When curating objects for a museum, we look for a narrative. We have been very specific in selecting pieces to build this story," Nanda explained during a tour of the museum.

Among the most interesting artefacts that narrate Humayun's story is a pear-shaped water vessel of Jauhar Aftabchi, who later wrote one of the emperor's three biographies. A helmet in which Humayun cooked horse meat while facing food shortage during his travel to Persia also finds a place here.

The principal gallery, named 'Where the Emperor Rests', focuses on the architecture of Humayun's Mausoleum and the personality of the emperor. The exhibits convey stories of his travels, administration, interest in reading, astrology, the arts, and his patronage of architecture. Another gallery, called the 'Icons of a Sacred Landscape', highlights four cultural figures associated with the Nizamuddin area from 14th century: Sufi Saint Hazrat Nizamuddin Auliya, his disciple and poet Amir Khusrau Dehalvi, Rahim (a commander-in-chief of Akbar's army and poet), and Dara Shukoh (known for translating the Upanishads into Persian).

The artefacts displayed in the museum are on loan from the National Museum for 10 years.

The museum also features artefacts from other Mughal rulers. Among the exhibits are coins from the reigns of 18 Mughal-era kings and the throne of Bahadur Shah Zafar, the last Mughal emperor. "Coins from Akbar's era have 'Allah' on one side and 'Ram' on the other.

Coins from Jahangir's era were the most expensive, and those minted by Bahadur Shah Zafar are the hardest to find," Nanda said, pointing to the display.



BUSINESS & ECONOMICS

INDIA CREATES LEGROOM TO SIGN UK, EU FTAS WITH CUSTOMS ACT AMENDMENTS

To create legroom for signing free trade agreements (FTAs) with developed nations such as the UK and European Union, the Union Budget 2024 has introduced amendments in the Customs Act, liberalising compliance with value-addition norms that typically guard against misuse of concessions agreed in a trade pact.

Key takeaways:

- Value addition norms guided by ‘rules of origin’ assume special significance at a time when India is signing a slew of FTAs. Rules of origin are the criteria needed to determine the national source of a product.
- The government on Tuesday amended Section 28DA of the Customs Act, 1962 substituting ‘certificate’ of origin with ‘proof’ of origin. The fine prints of the Budget defined “Proof of origin” as a “certificate” or “declaration” in accordance with a trade pact.
- Tax experts explained that the amended Customs Act now enables the acceptance of “proof” of origin (if India decided so in an agreement) which is a wider term that includes a certificate of origin as well as a self-declaration in line with global Customs norms.
- While the amendments give Indian trade negotiators a choice as to which geography they wish to allow self-certification by foreign exporters, India has seen various instances of breaches in rules of origin.

For Your Information:

- India on March 10, 2024 signed a trade agreement with the four-nation European Free Trade Association (EFTA), an intergovernmental grouping of Iceland, Liechtenstein, Norway and Switzerland. The deal brings in \$100 billion in investment over 15 years, with the EFTA looking at joint ventures that will help India diversify imports away from China
- New Delhi and London have been negotiating a proposed free trade agreement (FTA) for more than two years to boost trade between the two nations... However, a landslide victory for the Labour Party in the UK elections could lead to a change in the dynamic of the FTA negotiations.

EXPLAINED: KEY TAKEAWAYS FROM THE 2023-24 ECONOMIC SURVEY

The Economic Survey for 2023-24 stands out from previous economic surveys in that it provides a more realistic picture of the challenges before India’s economic growth. As such, despite India’s GDP growing at more than 8% in FY 2023-24, the survey pegs the GDP growth rate for the current financial year (FY 2024-25) between 6.5% and 7%.

Here are some key challenges that the survey flags, and the recommendations it makes to address these.

The Survey’s diagnosis

Global headwinds: The environment for foreign direct investment (FDI) to grow in the coming years is not highly favourable. High interest rates in developed countries have not only raised the

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



cost of funding, but also increased the opportunity cost to invest in developing countries like India. Moreover, economies such as India have to compete with industrial policies in the developed world involving considerable subsidies that encourage domestic investment. Geopolitical uncertainties also continue to play spoilsport.

China challenge: The Chief Economic Advisor (CEA) underscored how India continues to be overly dependent on China for imports, especially for renewable energy. He also stated that China has not let go of the low-skills manufacturing space that India wanted to occupy.

AI threat: The Survey notes that while there has been a boom in telecommunications and Internet facilitated business process outsourcing (BPO), the next wave of technological evolution might bring the curtains down on it.

Tepid private investment: The Survey emphasised that the corporate sector had not responded, despite the Union government cutting taxes in September 2019 to facilitate capital formation. "...Between FY20 and FY23, the profit before taxes of the Indian corporate sector nearly quadrupled...Hiring and compensation growth hardly kept up with it," the CEA stated in the Survey.

Employment imperative: The Indian economy needs to generate an average of nearly 78.5 lakh jobs annually until 2030 in the non-farm sector to cater to the rising workforce.

Data deficiency: A constant refrain against the government has been the lack of good quality and timely data especially related to employment. In the Survey, the CEA accepted that this was indeed a gap that was holding back a proper analysis. "The lack of availability of timely data on the absolute number of (formal and informal) jobs created even at annual intervals, let alone at higher frequencies, in various sectors — agriculture, industry including manufacturing and services — precludes an objective analysis of the labour market situation in the country," it stated.

Lifestyle disadvantages: The Survey notes that "social media, screen time, sedentary habits, and unhealthy food are a lethal mix that can undermine public health and productivity and diminish India's economic potential."

Recommended solutions

Job creation by the private sector: One of the central pillars of the past two Narendra Modi governments has been the determination to reduce the role of government in the economy and incentivise the private sector to take over the dominant position. In doing so, the government had hoped that the private sector would create jobs. The Survey reiterated that hope: "...It is in the enlightened self-interest of the Indian corporate sector, swimming in excess profits, to take its responsibility to create jobs seriously."

Lifestyle changes by private sector: "India's traditional lifestyle, food and recipes have shown how to live healthily and in harmony with nature and the environment for centuries. It makes commercial sense for Indian businesses to learn about and embrace them, for they have a global market waiting to be led rather than tapped," writes the CEA.

Farm sector as the saviour: Traditional economic theories suggest that as economies develop they make a structural transition from agriculture to manufacturing and services. But the Survey states that "trade protectionism, resource-hoarding, excess capacity and dumping, onshoring production and the advent of AI are narrowing the scope for countries to squeeze out growth from manufacturing and services" and "forcing us" to turn conventional wisdom on its head. In other



words, the CEA states, “A return to roots, as it were, in terms of farming practices and policy making, can generate higher value addition from agriculture, boost farmers’ income, create opportunities for food processing and exports and make the farm sector both fashionable and productive for India’s urban youth”.

Removing regulatory bottlenecks: “The Licensing, Inspection and Compliance requirements that all levels of the government continue to impose on businesses is an onerous burden. Relative to history, the burden has lightened. Relative to where it ought to be, it is still a lot heavier,” stated the CEA. He singled out the Medium, Small and Micro Enterprises (MSMEs) as one sector that required to be relieved of regulatory burden the most.

Building state capacity: The CEA noted that what was needed in the economy now was not big reforms but the grunt work. To this end it advocated building up state capacity for sustaining and accelerating India’s progress.

WHY ECONOMIC SURVEY ARGUES FOR CLIMATE ADAPTATION, NOT MITIGATION

That the international framework for fighting climate change has been ineffective is evident from the fact that none of the targets set by it has ever been met. It is also well known that the system is highly inequitable. And yet, any suggestion of an alternative approach risks being seen as heresy.

The Economic Survey presented on Monday decided to risk it. Its two chapters on climate change were devoted almost entirely to pointing out the flaws and inequities in the system, and suggesting alternative pathways that incorporate, among other things, lifestyle and behavioural changes to reduce greenhouse gas emissions.

The Survey noted that the “excessive preoccupation” with meeting the 1.5- or 2-degree Celsius temperature target was putting impossible pressure on developing countries, forcing them to make choices they were not ready for, and diverting their focus and resources away from the more near-term imperatives of improving the lives of their people.

It went so far as to suggest that it was possible to imagine a warmer world that was more equitable and resilient than a world in which the 1.5-degree threshold was achieved at all costs.

The Economic Survey does not deny climate change. These arguments are not new, and already have wide resonance in the developing world. Just that these views would be expressed in informal groups behind closed doors, and not in a policy document of the government. It is not clear though whether the Economic Survey was making an academic argument, or signalling of possible shift in India’s energy transition trajectory.

Increasing resilience

In essence, the Economic Survey’s argument is that adaptation should get at least as much importance as mitigation — more so because the impacts of climate change are already unfolding, and it is becoming increasingly clear that the 1.5-degree target will be breached very soon, no matter what the world does (or not) in response. In this situation, rapid improvement in incomes and overall well-being of the people is the best insurance against climate change.

It is important to understand that while there is near consensus in the scientific community that the frequency and intensity of climate impacts increase with rise in temperature, the 1.5- or 2-



degree thresholds are chosen arbitrarily — they are not natural thresholds for climate change. There are no climate impacts that get triggered only after these limits are crossed, and not before.

To those who do not subscribe to the doomsday view that climate change would destroy the world in a few years, the argument of the developing countries will make sense. Since climate impacts cannot be stopped, the world must focus on rapid development and adaptation to increase resilience, especially among communities that are at the greatest risk.

The counter-argument: at these higher temperatures, the ferocity of climate impacts would increase so much that incremental improvements in resilience would be rendered useless.

Indeed, there are uncertainties on both sides. It is in this context that it is sometimes proposed that the rich and developed countries do the mitigation work while developing countries focus on adaptation. But this is easier said than done.

Inequities and hypocrisy

The Economic Survey articulates the impatience of developing countries with the developed world's hypocrisy. The United States has the largest historical responsibility, but has been the biggest laggard on emissions reductions. Its 2019 emissions were about 6% higher than in 1990, and is even now only marginally lower. The developed countries as a bloc have not fulfilled any of their emission reduction targets, or their commitments to provide finance or technology to the developing countries.

The responsibility for these failures have been sought to be passed on to the rest of the world in the form of calls for enhanced climate action. In fact, the international climate architecture has always been less about saving the planet from the consequences of climate change and more about preserving the existing world order. It has become the vehicle to perpetuate the dominance of the rich and industrialised world by mandating transitions that are more suited to them.

If it was just about climate, there would have been no need to junk the Kyoto Protocol which was far more equitable and effective to deal with climate change. But the process to dismantle the Kyoto Protocol — and replace it with something more suitable (eventually the Paris Agreement) — began immediately after it came into effect. The developed countries realised quickly that Kyoto had the potential to challenge — or at least make it difficult to perpetuate — the prevailing global order.

Scientific organisations such as the Intergovernmental Panel on Climate Change (IPCC) have strengthened the narrative of the developed countries. Even as it became increasingly clear that the 1.5-degree target would be breached, almost every scientific assessment continued to present scenarios that showed that it was still possible to achieve the target, if only more effort was made. These scenarios may be plausible in theory, but are completely unrealistic given the countries' track record. But each such report is followed by calls for greater action, which translates into enhanced pressure on the developing countries.

Recent work by Tejal Kanitkar, an assistant professor at the Tata Institute of Social Sciences, and her colleagues has shown how inequities and biases were built into the models used by the IPCC to draw up climate scenarios. Their studies have shown that the most recent IPCC assessment had disregarded both the historical responsibility of the developed countries and the future energy requirements of the developing nations.



Alternative approaches

The Economic Survey's criticism of the established order on climate change needs to be followed up by effective action.

✦ While building its infrastructure, India could make it among the most climate resilient in the world. But this does not seem to be happening at the fastest pace and largest scale that is possible. The Central Vista, for example, will be a huge improvement over the current set of buildings in the Central Secretariat complex, but it remains to be seen if it will be the best model for futuristic building.

✦ The Smart City plans that were begun nine years ago contain several elements of climate proofing, but most of these cities are still struggling with managing their sewage.

✦ The railways stations that are being built are likely to be far better than the existing ones. But they will not be the world's most climate-friendly stations.

✦ India has been offering Mission Life — which calls for lifestyle and behavioural changes — as a key ingredient of its climate change strategy, but it is still to become a mass movement. Pointing to over-consumptive lifestyles of the developed world has limited use when the rich in India indulge in similar over-consumption.

GOVT, PEOPLE NEED TO FOCUS ON DIET, MENTAL HEALTH

This year's Economic Survey takes note of economic impact of an increasing burden of non-communicable diseases and mental health issues, stating: "For India's working-age population to be gainfully employed, they need skills and good health. Social media, screen time, sedentary habits, and unhealthy food are a lethal mix that can undermine public health and productivity and diminish India's economic potential."

— The report states that obesity and diabetes are on the rise in the country. Citing data from the National Family Health Survey (NFHS-5 in 2019 and 2021), the survey says obesity has increased by four percentage points in men and 3.4% in women over previous round of the survey in 2015-16.

— Blaming the upsurge in the consumption of highly processed food containing sugar and fat, it says: "If India needs to reap the gains of its demographic dividend, it is critical that its population's health parameters transition towards a balanced and diverse diet."

— The report states that 56.4% of total disease burden is due to unhealthy diets, as the National Institute of Nutrition had said in its recent dietary guidelines for Indians.

— The survey goes on to say the incidence of Type 2 diabetes has increased from 2% to 20% over the last 50 years... The government has planned screening for non-communicable diseases such as diabetes, hypertension, and the three-most common cancers through its network of over 1.6 lakh health and wellness centres across the country.

— On mental health, it stated that 10.6% adults suffered from mental disorders in India according to National Mental Health Survey 2015-16. It also mentions the negative impact of social media on mental health of the children.



EXPLAINED: MAKING SENSE OF THE 2024-25 UNION BUDGET

The Union Budget for 2024-25 — Finance Minister Nirmala Sitharaman's seventh in a row and the twelfth Budget of the Narendra Modi government — departs significantly from all previous Budgets presented by this government in its approach towards managing India's economy.

What is the Union Budget?

The Union Budget (technically called the Annual Financial Statement under Article 112 of the Constitution of India) lays out an account of the government's financial health. It tells the citizens not only how much money the government raised last year, where it spent it, and how much it had to borrow to meet the gap, but also gives an estimate of what it expects to earn in the next financial year (in the present case, the current financial year), how much and where it plans to spend it, and how much it would likely have to borrow to bridge the gap. The Revenue and the Capital sections together, make the Union Budget.

What are the important Budget Documents?

Besides the Union Finance Minister's Budget Speech, various Budget documents are presented to the Parliament.

A. Documents mandated under the constitution of India:

1. Annual Financial Statement (AFS) – Under Art. 112
2. Demands for Grants (DG) — Under Art. 113
3. Finance Bill— Under Art. 110

B. Documents presented as per the provisions of the Fiscal Responsibility and Budget Management Act, 2003:

1. Macro-Economic Framework Statement
2. Medium-Term Fiscal Policy cum Fiscal Policy Strategy Statement

What are some important terms related to Budget?

- 1) **Revenue Budget:** The revenue budget consists of the government's revenue receipts (Tax revenues and non-tax revenues) and revenue expenditures. Tax revenues comprise proceeds of taxes and other duties levied by the Union.
- 2) **Revenue Expenditure:** Revenue expenditure is for the normal running of Government Departments and for rendering of various services, making interest payments on debt, meeting subsidies, 11 grants in aid, etc. Broadly, the expenditure which does not result in the creation of assets for the Government of India is treated as revenue expenditure.
- 3) **Capital Budget:** Capital receipts and capital expenditures together constitute the Capital Budget. The capital receipts are loans raised by the Government. Capital expenditure consists of the acquisition of assets like land, buildings, machinery, equipment, as well as investments in shares, etc., and loans and advances granted by the Central Government to the State and the Union Territory Governments, Government companies, Corporations, and other parties.



- 4) **Fiscal Deficit:** Fiscal Deficit is the difference between the Revenue Receipts plus Non-debt Capital Receipts (NDCR) and the total expenditure. In other words, fiscal deficit is “reflective of the total borrowing requirements of Government”.
- 5) **Demands for Grants:** Article 113 of the Constitution mandates that the estimates of expenditure from the Consolidated Fund of India included in the Annual Financial Statement and required to be voted by the Lok Sabha, be submitted in the form of Demands for Grants.
- 6) **Money Bill:** Article 110 defines a “Money Bill” as one containing provisions dealing with taxes, regulation of the government’s borrowing of money, and expenditure or receipt of money from the Consolidated Fund of India, among others.
- 7) **Finance Bill:** At the time of presentation of the Annual Financial Statement before the Parliament, a Finance Bill is also presented in fulfillment of the requirement of Article 110 (1)(a) of the Constitution, detailing the imposition, abolition, remission, alteration or regulation of taxes proposed in the Budget. A major difference between money and Financial Bills is that while the latter has the provision of including the Rajya Sabha’s (Upper House) recommendations, the former does not make their inclusion mandatory. The Lok Sabha has the right to reject the Rajya Sabha’s recommendations when it comes to Money Bills.

KEY TAKEAWAYS I

Union Finance Minister Nirmala Sitharaman presented the Union Budget 2024 on Tuesday. She highlighted the four main focus points of the first budget under the Modi 3.0 government. It includes: ‘Garib’ (Poor), ‘Yuva’ (Youth), ‘Annadata’ (Farmer) and ‘Nari’ (Women). In her 7th Union Budget speech, the finance minister highlighted that this year’s Budget envisages sustained efforts on nine priorities: productivity & resilience in agri, employment & skilling, inclusive human resource development & social justice, manufacturing & services, urban development, energy securities, infrastructure, innovation, R&D and next gen reforms.

AGRICULTURE

— **Allocation:** Agriculture and allied sectors were allocated 1.52 Lakh Crore in the Union Budget 2023-24.

— **Release of new varieties:** The new 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops will be provided to the farmers.

— **Natural Farming:** In the next two years, 1 crore farmers across the country will be initiated into natural farming. The government will establish 10,000 need-based Bioinput research center.

— **Digital Public Infrastructure (DPI) for Agriculture:** The government in partnership with states will facilitate implementation of DPI in three years. The government will enable Jan Samarth-based Kisan Credit cards in five states.

— Sitharaman also allocated Rs 500 crore for Namo Drone Didi scheme, an initiative aimed at providing drones to 15,000 selected women’s self-help groups.



EMPLOYMENT AND SKILLING

— The government announced Rs 1.48 lakh crore for education, employment and skill. It will introduce five schemes to provide employment and benefit 4.1 crore youth with an outlay of Rs 2 lakh crores.

— Three new employee-linked incentive schemes will be launched:

- i) **Scheme A** will support direct benefit transfer of one month salary for first-timers expected to benefit 210 lakh youths.
- ii) **Scheme B** pertains to job creation in manufacturing. It is expected to benefit 30 lakh youths entering employment, and their employers.
- iii) **Scheme C** is employer-focussed scheme covering additional employees in all sectors. The scheme is expected to incentivize additional employment of 50 lakh persons.

— The government also announced a new centrally sponsored scheme for skilling in collaboration with states and industry. As part of the scheme, 20 lakh youth will be skilled over five years.

Education

— The government will provide education loans of Rs10 lakh for students for higher education in domestic institutions.

— E-vouchers for this purpose will be given directly to one lakh students every year for annual interest subvention of 3 per cent of the loan amount.

— One thousand industrial training institutes will be upgraded, and the model skill loan scheme will be revised to facilitate loans of up to Rs. 7.5 lakh. This is expected to help 25,000 students a year. Medical colleges and sports institutions will be constructed in Bihar.

Women

— The government announced measures to facilitate higher participation of women in the workforce such as establishment of working women's hostels and creche facilities.

— Other measures include women-specific skilling programmes and promotion of market access to women-led SHG (Self-Help Groups) enterprises.

— For promoting women-led development, more than Rs 3 lakh crore allocated for schemes benefitting women and girls.

— The government also seeks to encourage states to consider offering lower stamp duty rates for properties purchased by women.

HUMAN RESOURCE DEVELOPMENT AND SOCIAL JUSTICE

Purvodaya

A plan for the all-round development of the eastern region of the country covering Bihar, Jharkhand, West Bengal, Odisha and Andhra Pradesh. This will cover human resource development, infrastructure, and generation of economic opportunities to make the region an engine to attain Viksit Bharat.



Amritsar Kolkata Industrial Corridor will support development of an industrial node at Gaya Development of road connectivity projects, namely (1) Patna-Purnea Expressway, (2) Buxar-Bhagalpur Expressway, (3) Bodhgaya, Rajgir, Vaishali and Darbhanga spurs, and (4) additional 2-lane bridge over river Ganga at Buxar at a total cost of ` 26,000 crore.

Andhra Pradesh Reorganization Act

— Special financial support through multilateral development agencies. In the current financial year Rupees 15,000 crore will be arranged, with additional amounts in future years. **Full committed to financing and early completion of the Polavaram Irrigation Project.** Funds will be provided for essential infrastructure such as water, power, railways and roads in Kopparthu node on the Vishakhapatnam-Chennai Industrial Corridor and Orvakal node on Hyderabad-Bengaluru Industrial Corridor.

Pradhan Mantri Janjatiya Unnat Gram Abhiyan

— To be launched for improving the socio-economic condition of tribal communities (in tribal-majority villages and aspirational districts.)

North East Region

— **More than 100 branches of India Post Payment Bank in NER**

MANUFACTURING AND SERVICES

For MSMEs — Formulation of a package covering financing, regulatory changes and technology support for MSMEs to help them grow and also compete globally.

— **Credit Guarantee Scheme for MSMEs in the Manufacturing Sector** (for purchase of machinery and equipment without collateral or third-party guarantee) and a separately constituted self-financing guarantee fund (to provide to each applicant, guarantee cover up to ₹100 crore)

— **New assessment model for MSME credit — Public sector banks will build their in-house capability to assess MSMEs for credit, instead of relying on external assessment.**

— **For those entrepreneurs who have availed and successfully repaid previous loans under the 'Tarun' category — the limit of Mudra loans will be enhanced to Rupees 20 lakh from the current Rupees 10 lakh**

— **Reduction of the turnover threshold of buyers for mandatory onboarding on the TReDS platform from Rupees 500 crore to Rupees 250 crore.**

— SIDBI will open new branches to expand its reach to serve all major MSME clusters within 3 years, and provide direct credit to them.

— Financial support for setting up of 50 multi-product food irradiation units and setting up of 100 food quality and safety testing labs with NABL accreditation will be facilitated.

For promotion of Manufacturing & Services

— **Internship in 500 top Companies for 1 crore youth in 5 years. (Companies will be expected to bear the training cost and 10 per cent of the internship cost from their CSR funds.)**



- Government to facilitate **development of investment-ready “plug and play” industrial parks with complete infrastructure in or near 100 cities**, in partnership with the states and private sector.
- **Rental housing with dormitory type accommodation for industrial workers.**
- Digital Public Infrastructure Applications proposed in the areas of credit, e-commerce, education, health, law and justice, logistics, MSME, services delivery, and urban governance.
- **Critical Mineral Mission for domestic production, recycling of critical minerals, and overseas acquisition of critical mineral assets to be set up.**
- The services of the Centre for Processing Accelerated Corporate Exit (C-PACE) will be extended.
- Government will launch the **auction of the first tranche of offshore blocks for mining.**
- An Integrated Technology Platform for IBC eco-system will be set up.
- Appropriate changes to the IBC, reforms and strengthening of the tribunal and appellate tribunals will be initiated to speed up insolvency resolution.

URBAN DEVELOPMENT

PM-AWAS Yojana Urban 2.0

- The **PM Awas Yojana Urban 2.0 aims to fulfil the housing requirements of 1 crore urban poor and middle-class families through an investment of ₹10 lakh crore.**
- This will entail **central aid of ₹2.2 lakh crore over the next 5 years.**
- A mechanism for interest subsidies to promote loans at affordable rates is also planned.
- In addition, laws and regulations will be implemented to promote efficient and transparent rental housing markets with increased supply.

Water Supply and Sanitation

- In collaboration with state governments and multilateral development banks, we will promote **water supply, sewage treatment, and solid waste management projects and services for 100 major cities through bankable initiatives.**
- These initiatives will also include the **use of treated water for irrigation and the filling of tanks in surrounding localities.**

Street Markets

- The success of **PM SVANidhi Scheme** altered the lives of street vendors. The government plans to assist in the establishment of **100 weekly haats or street food hubs** for the next five years.



Stamp Duty

- The states will be encouraged to continue to charge high stamp duty to moderate rates for all, as well as consider further lowering charges for properties purchased by women. It will form an essential component of urban development plans.

ENERGY SECURITIES

Nuclear Energy

- Research and development of small and modular nuclear reactors

The government will partner with the private sector for:

- (1) setting up **Bharat Small Reactors**,
- (2) research & development of **Bharat Small Modular Reactor**, and
- (3) research & development of **newer technologies for nuclear energy**.

Note:

As per the International Atomic Energy Agency (IAEA), the **SMRs are advanced nuclear reactors with a power generation capacity ranging from less than 30 MWe to 300+ MWe**.

SMRs are:

Small – physically a fraction of the size of a conventional nuclear power reactor.

Modular – making it possible for systems and components to be factory-assembled and transported as a unit to a location for installation.

Reactors – harnessing nuclear fission to generate heat for electricity production or direct application.

SMRs cover small and medium-sized modular reactors, depending on the countries' context whose SSCs are designed for factory production and transportation to project site for installation to shorten the construction schedule – aiming for the economy of serial production, e.g., adding power modules as demand arises.

Solar Power (PM Surya Ghar Muft Bijli Yojana)

- In accordance with the declaration in the interim budget, the **PM Surya Ghar Muft Bijli Yojana** has begun to install rooftop solar plants, **allowing 1 crore homes to get free power for up to 300 units per month**.

Pumped Storage Policy

- A strategy will be developed to promote pumped storage projects for electricity storage and to facilitate the smooth integration of renewable energy's increasing share, notwithstanding its variable and intermittent character, into the overall energy mix.



Advanced Ultra Super Critical Thermal Power Plants

- A joint venture between NTPC and BHEL has completed the **development of indigenous technology for Advanced Ultra Super Critical (AUSC) thermal power plants**, resulting in a full-scale 800 MW commercial plant.
- Additionally, **the development of indigenous capacity for producing high-grade steel and other advanced metallurgy materials for these plants will provide significant economic benefits.**

Roadmap for 'hard to abate' industries

- A strategy for transitioning the 'hard to abate' industries from 'energy efficiency' to 'emission objectives' will be developed.

Support to traditional micro and small industries

- An investment-grade energy audit of traditional micro and small enterprises, such as brass and ceramic, will be supported, and financial assistance will be provided to transition them to cleaner types of energy and install energy efficiency measures.
- The strategy will be reproduced in another 100 clusters in the following phase.

INFRASTRUCTURE

- **Allocation:** The government has allocated 11,11,111 crore for capital expenditure which would be 3.4 per cent of our GDP.
- **Pradhan Mantri Gram Sadak Yojana (PMGSY): Phase IV** of PMGSY will be launched to provide all-weather connectivity to 25,000 rural habitations.
- **Irrigation and flood control:** The government through the Accelerated Irrigation Benefit Programme and other sources, will provide **financial support for projects with an estimated costs of 11,500 crore such as the Kosi-Mechi intra-state link and 20 other ongoing and new schemes.**
- **Tourism:** Vishnupad Temple at Gaya and Mahabodhi Temple at Bodh Gaya in Bihar will be developed on the lines of Kashi Vishwanath Temple Corridor to transform them into world-class pilgrim and tourist destinations. Comprehensive development strategies for **Rajgir (Bihar) and Nalanda (Bihar)**. Assistance to the development of important destinations in Odisha will be provided.

INNOVATION AND RESEARCH & DEVELOPMENT

- **Basic research and prototype:** The government has decided to operationalise the **Anusandhan National Research Fund for basic research and prototype development.**
- **Space Economy:** To expand the space economy by 5 times in the next 10 years, the **government has decided to set up a venture capital fund of 1000 crore.**



NEXT GENERATION REFORMS

Rural & Urban Land related Reforms

Assignment of Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar for all lands.

Digitization of cadastral maps.

Survey of map sub-divisions as per current ownership.

Establishment of land registry

Linking to the farmers registry.

Land records in urban areas will be digitized with GIS mapping.

Labour-related Reforms

A comprehensive integration of e-shram portal with other portals will facilitate such one-stop solution.

Shram Suvidha and Samadhan portals will be revamped to enhance ease of compliance for industry and trade.

Taxonomy for climate finance

A taxonomy will be developed for climate finance to enhance the availability of capital for climate adaptation and mitigation.

Foreign Direct Investment and Overseas Investment

The rules and regulations for Foreign Direct Investment and Overseas Investments will be simplified to:

- i) Facilitate FDI
- ii) Nudge prioritization
- iii) Promote opportunities for using Indian Rupee as a currency for overseas investments.

NPS Vatsalya

A plan for contributions by parents and guardians for minors will be started. On attaining the age of majority, the plan can be converted seamlessly into a normal NPS account.

Ease of Doing Business

The government is working on the Jan Vishwas Bill 2.0. to enhance the ease of doing business. States will also be incentivized for implementation of their Business Reforms Action Plans and digitalization.



New Pension Scheme (NPS)

The Committee to review the NPS has made considerable progress in its work. A solution will be evolved which addresses the relevant issues while maintaining fiscal prudence to protect the common citizens.

Tax-Related Proposals

Simplifying New Tax Regime

In the new tax regime, the tax rate structure is proposed to be revised, as follows: Comprehensive review of Income Tax Act, 1961

— Finance Minister Nirmala Sitharaman announced **comprehensive review of Income Tax Act, 1961. The purpose is to make the Act concise, lucid, easy to read and understand. This will reduce disputes and litigation, thereby providing tax certainty to the tax payers. It is proposed to be completed in six months.**

— **A beginning is being made in the Finance Bill by simplifying the tax regime for charities, TDS rate structure, provisions for reassessment and search provisions and capital gains taxation.**

Angel Tax Abolished

— Union Minister Nirmala Sitharaman announces **the abolishment of angel tax on investors in India**, in a bid to boost startups.

— While the angel tax was **first introduced in 2012** to deter the generation and use of unaccounted money through the subscription of shares of a closely held company at a value that is higher than the fair market value of the firm's shares, its scope was widened even to non-resident investors from April 1, 2024 during last year's Union Budget that saw strong opposition by startups.

Litigation and Appeals

— To dispose of the backlog of first appeals, the Government plan to deploy more officers to hear and decide such appeals, especially those with large tax effect.

— For resolution of certain income tax disputes pending in appeal, the government proposed **Vivad Se Vishwas Scheme, 2024.**

— To reduce litigation and provide certainty in international taxation, the Government will expand the scope of safe harbour rules and make them more attractive.

Deepening the tax base

For deepening the tax base Security Transactions Tax on futures and options of securities is proposed to be increased to 0.02 per cent and 0.1 per cent respectively.

Other major proposals

— **Withdrawal of equalization levy of 2 per cent;**

— Expansion of tax benefits to certain funds and entities in IFSCs



- Immunity from penalty and prosecution to benamidar on full and true disclosure so as to improve conviction under the Benami Transactions (Prohibition) Act, 1988.
- Changes in custom duty.
- Simplification and Rationalisation of Capital Gains

KEY TAKEAWAYS II

Finance Minister Nirmala Sitharaman has provided a roadmap for the pursuit of Viksit Bharat @2047. She has identified nine key priority areas — productivity and resilience in agriculture, employment and skilling, inclusive human-resource development and social justice, manufacturing and services, urban development, energy security, infrastructure, innovation, research and development and next-generation reforms.

Budget 2024: Shifting focus from fiscal deficit to debt-GDP ratio

- Even as the government announced schemes to boost employment and assistance to some states in Union Budget 2024-25, it reiterated its intent to stick to the fiscal consolidation roadmap and announced a lower fiscal deficit target.
- In what could be a signal to rating agencies, the government **cut the fiscal deficit target to 4.9 per cent of the Gross Domestic Product (GDP) for financial year 2024-25 from 5.1 per cent in the interim Budget**, while underlining that **the central government debt will be on a declining path as a percentage of the GDP.**
- The government had pegged the fiscal deficit target at 5.9 per cent of the GDP in Budget 2023-24, which it was able to lower to 5.8 per cent in the revised estimates. The Budget 2024-25 documents presented on Tuesday showed that as per the 'provisional actuals' data, fiscal deficit for FY24 stands at 5.6 per cent of the GDP.

Centre's subsidy bill to fall to five-year-low in 2024-25

- **The Centre's outgo on subsidies is budgeted to decline to a five-year-low in 2024-25, both in absolute terms and as a percentage of gross domestic product (GDP).** This is despite no increases in the prices of fertilisers for farmers or that of foodgrains sold through the public distribution system (PDS).
- The subsidy bill peaked at Rs 758,165 crore (3.8 per cent of GDP) in 2020-21, which is expected to fall to Rs 428,423 crore (1.3 per cent) in the current year. **The lower spend is on account of two factors.**

1. The first is **the discontinuation of the free, additional 5-kg grain allocation to the 80 acre-plus PDS beneficiaries under the Pradhan Mantri Garib Kalyan Anna Yojana.**
2. The second major driver for the **Centre's lower overall subsidy provision is fertiliser.** At Rs 164,000 crore, the budgeted fertiliser subsidy for 2024-25 is down from the record Rs 251,339 crore of 2022-23, which resulted from high global prices following Russia's invasion of Ukraine.



From divestment to kickstarting private investment, the many silences

— The Union Budget speech for 2024-25 is silent on why private sector investments haven't quite commenced despite the corporate tax breaks in 2019, the significant ramping up of government's capex over the last few years, the improving profitability of India Inc, and healthy bank balance sheets.

— On Monday, the Economic Survey, authored by Chief Economic Advisor V Anantha Nageswaran, sought to answer if "the corporate sector had responded" to the cut in taxes in September 2019 to facilitate capital formation.

— Delving deeper into the issue, the Survey had found that in the four years till FY23, the private sector was investing more in 'dwellings, other buildings and structures' and not in 'machinery and equipment and intellectual property'. "This is not a healthy mix," it said.

— The issue of pushing through long pending second generation reforms was also acknowledged in the Budget. In essence, these reforms relate to various factors of production such as land, labour, capital and entrepreneurship, and technology. Reforms in these factors are expected to make them more efficient and improve productivity.

In the Budget, the Finance Minister announced that the government will formulate an economic policy framework that will initiate and incentivise reforms for improving productivity of factors of production. And while the Budget did announce some proposals, these fall short of a full set of factor market reforms as have been envisioned in the past.

Govt hikes long-term capital gains tax to 12.5% from 10%; clamps down on F&O trading, raises STT

— Finance Minister Nirmala Sitharaman on Tuesday raised taxation on income on short-term and long-term capital gains and also doubled the Securities Transaction Tax (STT) on futures & options (F&O) of securities.

— In the Union Budget 2024-25, Sitharaman announced an increase in the long-term capital gains (LTCG) on all financial and non-financial assets to 12.5 per cent, from 10 per cent. However, the exemption limit of Rs 1 lakh for LTCG on these assets has also increased to Rs 1.25 lakh.

— The rate on short-term capital gains (STCG) has been hiked to 20 per cent from 15 per cent. The new rates on LTCG and STCG are applicable from July 23.

Government withdraws 2% Equalisation Levy

— Finance Minister Nirmala Sitharaman announced to withdraw the 2% equalisation levy on the e-commerce supply of goods or services with effect from August 1, 2024.

Rental earnings to be classified as property income

— Rental income of taxpayers from residential properties will now be charged under the head 'income from house property' and not as income from business or profession, according to the Union Budget 2024.

— The Budget has recommended an amendment to Section 28 of the Income Tax Act to clarify that any income from letting out of a residential house or a part of the house by the owner shall be chargeable under the head "Income from house property".



Higher deduction for employers on NPS Contribution

The Union Budget 2024 has **raised the deduction on employers' National Pension System (NPS) contribution to employees' basic salary from the current 10 per cent to 14 percent. The change will apply to both public and private sector companies under the new tax regime.**

Union Budget 2024-25: INFRA

Govt looks to boost e-commerce exports, **will set up PPP hubs along lines of Southeast Asian countries**

— Finance Minister Nirmala Sitharaman Tuesday announced the **setting up of e-commerce export hubs across the country in public private partnership (PPP) mode along the lines of several Southeast Asian countries that are benefiting from the rapid growth of e-commerce exports.**

From Union Budget 2024-25: Social

In govt outreach to tribals, a new scheme for development of 63,000 villages

— With a saturation approach for achieving social justice, Finance Minister Nirmala Sitharaman Tuesday announced a new scheme **for socio-economic development of 63,000 tribal villages that will aim to cover 5 crore people from tribal communities.**

— In the Budget for Department of Social Justice and Empowerment, the government has also increased allocations for skilling of Scheduled Caste (SC) and Scheduled Tribes (ST), the National Overseas Scholarship Scheme for SCs and mechanised sanitation.

— In her Budget speech, Sitharaman said the government will launch the **Pradhan Mantri Janjatiya Unnat Gram Abhiyan** by “adopting saturation coverage for tribal families in tribal-majority villages and aspirational districts”.

Loan support for higher education, UGC sees big cut

— For youth who are not eligible for any benefit under government schemes and policies, Union Finance Minister Nirmala Sitharaman in her Union Budget speech Tuesday announced financial support for **loans up to Rs 10 lakh for higher education in domestic institutions.**

— With the Budget emphasising on employment and skilling, Sitharaman announced that a provision of Rs 1.48 lakh crore has been made in the Budget for education, employment, and skilling.

— In higher education, allocation for the University Grants Commission (UGC), as was indicated in the interim budget, has been slashed by Rs 2,860 crore in the Budget.

Customs duty cut on 3 cancer drugs: Hope for patients

— In her Budget speech Tuesday, Finance Minister Nirmala Sitharaman said, “To provide relief to cancer patients, I propose to fully exempt three more medicines from customs duties,” she said, referring to **trastuzumab deruxtecan, osimertinib and durvalumab**, three targeted therapy drugs with effective treatment outcomes that work by precisely identifying and inhibiting the growth of cancer cells.



— At present, these patented drugs, which are imported, are prohibitively expensive, costing around Rs 5 lakh a month, keeping it out of reach for most patients. Which is why, Sitharaman's announcement – of slashing customs duty on the three drugs from 10% to zero – holds out hope for cancer patients, **bringing the cost of a vial to under a lakh.**

From Union Budget 2024-25: MSMEs

New credit rating mechanism for smaller units; Mudra loan limit hiked

— Finance Minister Nirmala Sitharaman, in her Budget speech Tuesday, proposed a new assessment model for credit to Micro, Small and Medium Enterprises (MSMEs) that requires public sector banks (PSBs) to assess credit eligibility themselves instead of relying on external assessment.

— She also proposed to **increase the limit of Mudra loans from Rs 10 lakh to Rs 20 lakh** and the **credit guarantee scheme for purchase of machinery and equipment without collateral** will operate on pooling of credit risks of MSMEs seeking to benefit from the scheme, Sitharaman said.

— Finance Minister Nirmala Sitharaman on Tuesday announced a new mechanism for facilitating continuation of bank credit to MSMEs with stressed loan accounts under the special mention account category. The proposed mechanism is likely to bring relief to stressed MSMEs that have faced difficulty in utilising existing credit lines to pay dues.

NEIGHBOURHOOD FIRST IN EXTERNAL AFFAIRS' ALLOCATION FOR AID TO COUNTRIES

A major chunk of the Ministry of External Affairs' outlay, Rs 4,883 crore, has been earmarked for "aid to countries", of which countries from the neighbourhood – Nepal, Sri Lanka, Bhutan, Maldives, Afghanistan and Myanmar – get the lion's share.

— Bhutan has emerged as the top recipient of Indian government aid to foreign countries, according to the Union Budget documents... It gets the highest aid at an estimated Rs 2,068.56 crore, which is slightly less than Rs 2,400 crore last year.

— The provision is for India's multilateral and bilateral aid and assistance programmes to neighbouring and other developing countries. This assistance is provided to immediate neighbouring countries and also to the countries of Africa, Central Asia, South Asia and Latin America.

— Maldives will get Rs 400 crore in the new Budget, the same as last year.

— Nepal stands out as a significant beneficiary with an allocation of Rs 700 crore, marking a substantial increase of Rs 150 crore from the previous year's budget of Rs 550 crore, later revised to Rs 650 crore.

— Besides Nepal, there have been increased allocations for Sri Lanka and Seychelles as well, at Rs 245 crore (up by Rs 95 crore from last year's allocation of Rs 150 crore) and Rs 40 crore (up from Rs 10 crore), respectively.

— The Chabahar port project in Iran continues to receive a steady allocation of Rs 100 crore, unchanged for the past three years.



— The total Budget estimate for the MEA for 2024-25 is Rs 22,155 crore, which exceeds the Rs 18,050 crore allocated in 2023-24. However, it falls short of the revised estimate of Rs 29,121 crore for the same fiscal.

For Your Information:

— In 2024, it is the heads of Nepal, Bhutan, Bangladesh, Sri Lanka, and interestingly, three island states, Maldives, Mauritius and Seychelles, who were invited to the swearing-in ceremony of PM Modi on June 9.

THE BUDGET NUMBERS: WHAT WE KNOW AND WHAT WE DON'T

In 2020-21, the first year of the pandemic, the central government's fiscal deficit had surged to a staggering 9.2 per cent of GDP. Since then, Finance Minister Nirmala Sitharaman has been steadfast in her commitment to fiscal consolidation, while at the same time, managing to ramp up allocations for capital expenditure. By 2023-24, Sitharaman had managed to bring down the deficit to 5.6 per cent. In the latest budget, she has continued on that path, targeting a further reduction to 4.9 per cent this year, and restating her intent to bring it below 4.5 per cent by 2025-26. However, last year, the Union Budget was conservative in its revenue assessment — actual collections exceeded expectations by around Rs 1 lakh crore. This year, too, the assumptions underpinning the budget numbers appear to be restrained.

The budget has pegged gross taxes to grow at 10.8 per cent. This is in line with the 10.5 per cent nominal GDP growth it has assumed. But, this implies a tax buoyancy of one, which is considerably lower than what was witnessed last year (1.4; last year gross taxes growing at 13.5 per cent on nominal GDP growth of 9.6 per cent). Under the broad rubric of gross taxes, the budget has projected direct taxes to grow at a faster pace than indirect taxes, and within direct taxes, personal income taxes to outpace corporate taxes. In fact, collections from personal income taxes, which were earlier lower than corporate taxes, are now considerably higher. Alongside, the government's non-tax revenue is up, driven by a higher transfer from the RBI and receipts from other communication services. The latter includes licence fees for telcos and spectrum-usage charges. Tax devolution to states works out to around 32.5 per cent of gross tax collections as a sizeable share of revenue flows through the levy of cesses and surcharges.

On the expenditure side, the budget has pegged the Centre's spending to grow at 8.5 per cent this year, less than the growth assumed for the year. However, capital spending is expected to continue to outpace revenue expenditure, indicating the policy inclination of the government. The capex to GDP ratio has been maintained at 3.4 per cent, with the Ministry of Road Transport and Highways and Railways garnering a sizable share of the allocations. Alongside, the government's subsidy bill on food, fertiliser, petroleum and others is expected to decline further to 1.31 per cent of GDP this year, from 1.49 per cent last year. Allocations towards subsidies had peaked at 3.82 per cent in 2020-21. The medium-term fiscal policy cum fiscal policy strategy statement accompanying the budget has not provided the rolling targets for the next two years as was the practice in the past. While the budget does state that from 2026-27 it will try to keep the fiscal deficit at levels that ensure that government debt is on a declining path, it should provide greater clarity.

SHUFFLING THE DECK

Finance Minister Nirmala Sitharaman's first Budget of the BJP-led NDA government's third consecutive term in power is a distinct attempt to tell India's voters that it has heard the angst-



ridden message from the country's unemployed youth loud and clear. With the BJP having suffered reverses in the general election in the face of a concerted Opposition campaign that spotlighted issues agitating young voters such as a palpable lack of jobs, the Minister was keen to redress matters ahead of the slew of State elections later this year. Asserting that the poor, women, youth and farmers were the four 'castes' that this government was focused on serving, Ms. Sitharaman stressed that this year's Budget laid particular emphasis on "employment, skilling, MSMEs, and the middle class". As a part of this effort, a package of five schemes and initiatives have been proposed with a view to facilitating employment, skilling and other opportunities for 4.1 crore youth over a five-year period with a central outlay of ₹2 lakh crore. The centrepiece is a scheme to provide a month's wage as subsidy to all persons newly entering the workforce in a formal sector job, which would entail the employer registering the employee at the Employees' Provident Fund Organisation (EPFO). The direct benefit transfer of one-month salary, subject to a cap of ₹15,000, would be made in three instalments to first-time employees. The key caveat is that the employer would have to refund the subsidy if the first-timer's employment ended within 12 months of hiring. Other schemes are an incentive support for job creation in the manufacturing sector, one offering direct support to employers who boost the number of jobs registered with the EPFO, and another, a skilling programme in concert with States, and the private sector that leverages the existing network of ITIs to boost the employability of the youth. The fifth in this quiver of schemes, predictably credited as being under the aegis of the Prime Minister, is an interesting move to facilitate internship opportunities to the youth in 500 top companies. The scheme, which appears to mirror a similar proposal contained in the Congress manifesto, entails the interns being paid a monthly allowance of ₹5,000 and a one-time assistance of ₹6,000, with the participating corporates expected to bear the training cost for the 12-month period as well as 10% of the internship allowance from CSR funds. Targeted at unemployed persons aged between 21 and 24 who are not engaged in full-time education at the time of applying, the Minister said this scheme would, over a five-year period, potentially provide one crore youth with a chance to gain exposure to a real-life business environment and varied professions. All these schemes will, however, need to be weighed against the backdrop of the fact that India needs to, on average, generate 78.5 lakh non-farm jobs annually until 2030, as the Chief Economic Adviser highlighted in his Economic Survey, largely to absorb the workforce exiting agriculture.

In yet another acknowledgment of the primacy of the political economy in policy making, Ms. Sitharaman has sought to quell the strident Opposition charge of being too cosy with large corporates by making a concerted bid to address some of the challenges faced by the lynchpin MSME sector. Beginning with a credit guarantee scheme to help MSMEs in the manufacturing sector obtain loans to finance their purchases of machinery and equipment without collateral or a third-party guarantee, the Budget's proposals for the key employment-providing sector have been tailored to ease their access not only to debt financing and working capital, but also to business opportunities as potential suppliers to a wider pool of central public sector enterprises and large corporates. MSMEs, however, may wait to see the outcome of yet another Budget assurance by the Minister — that the government will work to further simplify the GST regime and rationalise the tax structure — before cheering, given the difficulties they encounter with the indirect tax system. For the middle-class, Ms. Sitharaman's menu of offerings is focused almost entirely on tax relief for the salaried. In a bid to entice more taxpayers to wholeheartedly embrace the new Income-Tax regime, the standard deduction has been raised and the tax slabs with their relevant tax rates revised so as to leave a little more money in the hands of the salaried, post taxes. Pensioners are also set to benefit by a marginal increase of ₹10,000 in the deduction allowed on family pensions.



Ms. Sitharaman's Budget for 2024-25 yet again sticks to the government's fiscal consolidation path, with the Fiscal Deficit proposed to be pared to 4.9% of GDP. To achieve this fiscal goal, the Minister has quietly set about paring spending on several social sectors including school and higher education that saw cuts in their shares of Budget outlays. The most egregious reduction though must be the cut in share of spending on the rural job guarantee scheme — MGNREGA — with the Budget Estimate pegging the spending on the scheme at a nine-year low share of 1.78% of overall outlay, down from 1.92% in the Revised Estimates for 2023-24. Subsidies too across the board, from fertilizers to food and petroleum have been pared. And glaring in its absence in Ms. Sitharaman's speech was any mention whatsoever of what was once the country's single-largest employer, the Indian Railways. Political compulsions, as expected, resulted in significant allocations for Bihar and Andhra Pradesh, the States with the BJP's crucial allies in power. All told, Ms. Sitharaman seems to have balanced the political and fiscal compulsions to some extent.

MORE FOR MORE

Budgets of the Union or the States, as much as they are revenue and expenditure statements for the upcoming fiscal year, are also an exercise in political economy, and the recently tabled Union Budget for 2024-25 is no different. Aside from the "nine priorities", beginning with provisions for the farm sector and attempts to boost employment, Union Finance Minister Nirmala Sitharaman delved at some length on the special provisions made for the States of Andhra Pradesh and Bihar. Both are headed by parties providing crucial support to the Bharatiya Janata Party (BJP) after its underwhelming performance in the 2024 general election. The Janata Dal (United) headed by Bihar Chief Minister Nitish Kumar, and the Telugu Desam Party headed by his Andhra Pradesh counterpart N. Chandrababu Naidu are parties associated with the convenership of the National Democratic Alliance in the past. These are also parties that severed long-standing ties with the BJP over issues that ranged from Prime Minister Narendra Modi's alleged non-secular credentials to ignoring demands for increased central aid. Bihar has now received the largest chunk with outlays worth almost ₹59,000 crore. These include road infrastructure outlays for ₹26,000 crore, ₹21,400 crore for a 2,400 MW power plant, and ₹11,500 crore to address irrigation and flood mitigation. While Mr. Naidu had been more vociferous than Mr. Kumar with his demands for assistance worth ₹1 lakh crore, the cornerstone outlay in the Budget was a facilitation of 'special financial support' of ₹15,000 crore for the development of the State's new capital, Amaravati. While Ms. Sitharaman promised to hasten the completion of the Polavaram irrigation project 'to ensure food security of the nation', Budget documents do not mention concrete outlays.

Both States have unsustainable public debts of about one-third, that is the debt to Gross State Domestic Product ratio, and both deserve the special attention they have received. But by making piecemeal allocations for projects in the rest of the country, as for the Mumbai Metro rail, and by ignoring other similar critical infrastructure spends in Opposition-ruled States (Chennai's Metro rail in Tamil Nadu and Kerala's Vizhinjam port project are examples), Ms. Sitharaman has failed to provide a fair and equitable distribution of the Union's finances. While the debt-ridden and poorer regions of the country rightly deserve greater attention, ignoring States that generate the most revenue for the Union runs the risk of slowing down development that has acquired critical mass to enable these States to become global economic powerhouses. As they have begun attracting cutting-edge technology, corporates, talent and creating the required research and development base to house next-generation industries on energy transition, automobiles, artificial intelligence, mobile and semi-conductors, the industrially and socio-economically advanced States too need a helping hand.



UNION BUDGET 2024: ON AGRICULTURE, A LACK OF VISION

The Union Budget has received kudos for staying the course on fiscal consolidation, but has also been panned for being short on big ideas. A case in point is the farm sector. Despite Finance Minister Nirmala Sitharaman listing “productivity and resilience in agriculture” as the first of her nine priorities, there’s little in the proposals that captures the imagination. The plan to “initiate” one crore farmers into natural farming “in the next two years” is a virtual repetition of the budget promises of 2023-24 (to “facilitate” one crore farmers to adopt the same “over the next three years”) and 2022-23 (to “promote” chemical-free farming in 5-km wide corridors along the river Ganga). Building a digital public infrastructure for agriculture to upload the details of farmers and their lands found mention in last year’s budget too. Developing large-scale clusters and supply chains for vegetables was discussed in the 2018-19 budget with reference to an Operation Greens scheme specific to tomato, onion and potato.

The lack of novelty, detail and ambition is striking for a government that, in its previous term, had enacted three major agriculture reform laws. If protests by farmer unions led to their repeal then, the fear of political opposition seems to have precluded any substantive reform action now. There is no attempt at rationalisation of urea prices or redirecting government spending on fertiliser and food subsidies towards investment in farm research, extension, irrigation, market yards and other infrastructure. Sitharaman has stated that the government will undertake a “comprehensive review” of the agriculture research set-up “to bring the focus of raising productivity and developing climate resilient varieties”. But the budget for the department of agricultural research and education has been raised only marginally to Rs 9,941 crore, from Rs 9,877 crore in the revised estimates for 2023-24.

A country with a population expected to peak at 1.7 billion and growing incomes cannot import its food requirements beyond a point. If more has to be produced from less land and per unit of water, nutrients and labour, while coping with climate change, it calls for a long-term plan. The Green Revolution wouldn’t have happened without the investments in the ICAR and state agricultural universities, and irrigation dams, land reforms and consolidation of holdings, by the governments during the 1950s and 1960s. A similar vision is needed today. One would have expected at least some of it in this budget.

AI MISSION: WITH FRESH BUDGETARY ALLOCATION, IT MINISTRY LOOKS TO PROCURE UP TO 500 GPUS

After receiving its first budgetary allocation for the ambitious IndiaAI Mission, the IT Ministry is looking at soon releasing a tender to procure between 300 to 500 graphics processing units (GPUs) to help the private sector build domestic computing capacity for building and testing artificial intelligence (AI) systems, The Indian Express has learnt. In the Union Budget 2024, the Ministry of Electronics and IT has been allocated Rs 551.75 crore for the IndiaAI Mission for 2024-25.

In March, the Union Cabinet had cleared the Rs 10,372 crore IndiaAI Mission to establish a computing capacity of more than 10,000 GPUs and also help develop foundational models with a capacity of more than 100 billion parameters trained on datasets covering major Indian languages for priority sectors like healthcare, agriculture, and governance. The idea is that if such an infrastructure exists in the country, start-ups could plug into it for developing AI systems.



As a first step though, the ministry is taking a more moderated approach. “With the allocation, we will look at AI compute, skilling, data sets and some other applications... the funds outlay for now, we will aim at procuring 300 to 500 GPUs. We will release a tender in due course,” a senior government official said on condition of anonymity.

Computing capacity, or compute, is among the most important elements of building a large AI system, apart from algorithmic innovation and data sets. It is also one of the most difficult elements to procure for smaller businesses looking to train and build such AI systems, given the high costs. It is also likely to be a weak point in India’s AI strides as no major domestic company currently controls the crucial hardware needed to build large scale datasets. In that, Nvidia has a near virtual monopoly, with its A100 chip — considered to be the most cutting edge for AI applications — costing as much as \$10,000.

This is why the government has decided to step in and help procure some GPUs to allow Indian start-ups access to such computing needs early on. This is a strategy that the European Union is following as well. To allay concerns over overregulation of AI, which could stifle innovation, the European Commission earlier this year released a set of rules to enable startups and other businesses to access hardware — such as supercomputers and computing capacity — to build large-scale AI models.

Of India’s Rs 10,370 crore plan, the implementation of computing infrastructure will be done through a public-private partnership model with 50 per cent viability gap funding. If the compute prices come down, the private entity will have to add more compute capacity within the same budgeted amount to meet increased demand. Of the total outlay, Rs 4,564 crore has been earmarked for building computing infrastructure.

The Cabinet has approved the financing by the government of deeptech startups at various levels of growth. Of the total outlay, roughly Rs 2,000 crore has been earmarked towards this. As part of the programme, an IndiaAI Datasets Platform will be set up, which will look at leveraging the quality, access, and use of non-personal datasets for AI innovation. The platform will be tasked with hosting identified “high-quality” AI-ready datasets.

Together, these proposals cover two of the most crucial elements of building large language models: the hardware and access to high-quality datasets.

The government will also set up the IndiaAI Innovation Research Centre, which will undertake the development and deployment of large foundational models, with focus on indigenous Large Multimodal Models and domain-specific foundational models. Close to Rs 2,000 crore has been earmarked for this centre. There is a plan to financially support 4,000 BTech, 400 MTech, and 600 PhD candidates who will focus on AI in premier educational institutions.

PPF RETURNS STILL LANGUISHING LOWER THAN FORMULA-BASED RATES, SAYS RBI

The interest rates offered by the Union government on two of India’s most popular small savings schemes — the Public Provident Fund and five-year recurring deposits — continue to languish below the rates they should have earned as per a formula-based system adopted since April 2016, the Reserve Bank of India (RBI) has indicated.

The PPF rate has been static at 7.1% since April 2020. The return on the five-year recurring deposit (RD), which had been frozen at 5.8% from April 2020 to March 2023, had been hiked gradually over the first three quarters of 2023-24, taking it to 6.7% by last October.

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



At the time, the RBI had reckoned that the returns on the PPF were 41 basis points (bps) lower than their formula-based rates, while the five-year RD rate was 21 bps lower, for the October to December 2023 quarter. One basis point equals 0.01%.

The formula for quarterly resets of small savings rates, mooted by a panel led by former RBI Deputy Governor Shyamala Gopinath, links them to secondary market yields on government securities of comparable maturities over a three-month period prior to each quarter.

The PPF rate was last hiked in October 2018, when it was pegged at 8% ahead of the 2019 Lok Sabha election. After that poll, the government reduced the rate to 7.9% from July 2019, and slashed it further to 7.1% at the onset of 2020-21, when it cut rates on all small savings instruments in the range of 0.5 and 1.4 percentage points (or 50 to 140 bps).

Before the 2024 Lok Sabha election, the Union government announced a hike in rates on most small savings schemes for six successive quarters, culminating in the January to March 2024 quarter, when the returns on the Sukanya Samriddhi Account Scheme (SSAS) were raised from 8% to 8.2%, and the three-year time deposit from 7% to 7.1%. While there have been no changes effected in rates since the PPF rate has been excluded from the ambit of all these hikes.

Tax-free scheme

“The Government of India kept rates on small savings schemes unchanged for Q2:2024-25 [July to September 2024]. Rates on various schemes are now aligned with the formula-based rates except for public provident funds and five-year recurring deposits,” the RBI noted, in its latest monetary policy report. Unlike last October, the RBI has not quantified the gap between the formula-based rate and the PPF and five-year RD rates.

The Finance Ministry has generally defended the stasis in PPF rates by emphasising that the returns on the scheme are tax-free and so tax-adjusted returns are higher. But the same tax treatment is also offered on the SSAS. The SSAS rate was frozen at 7.6% from April 2020 to March 2023, but was raised to 8% last April and 8.2% from this January.

NO POLLUTION CONTROL PERMITS FOR ‘WHITE CATEGORY’ SECTORS NOW

Those industries which are practically non-polluting and categorised under the ‘white category’ by the Central Pollution Control Board will now not require prior permission of the state pollution control boards to establish and operate under the Air Act, 1981 and Water Act, 1974, according to two separate draft notifications of the Environment Ministry.

Key takeaways:

— These permissions known officially as ‘consent to establish’ (CTE) and ‘consent to operate’ (CTO) are granted to regulate industries that discharge effluents or emit pollutants into the environment. The ministry has also proposed to do away with the CTE permit for “projects/activities” that require prior environmental clearance (EC). As per the Water Act, 1974, and Air Act, 1981, the CTE or a NOC is required before the commencement of the construction activities and CTO before starting operation of units like individual establishments from the state pollution control boards concerned.



— White category industries, exempted from the CTO and CTE permit regime, would have to inform the state pollution control boards about their operations through self-declarations, the draft notifications said.

For Your Information:

— Wind and solar power projects, assembly of air coolers, bicycle assembly are some of the projects and activities that come under the white category and are exempted from CTE and CTO permits.

INDIA'S GARMENT EXPORT WOES SELF-INFLICTED: REPORT

Exports from India's labour-intensive garment sector, which have been losing ground to rivals such as Vietnam and Bangladesh and were lower than the 2013-14 levels last year, have been dented more by the country's high duties and barriers on raw material imports along with difficult customs and trade procedures, rather than other nations' competitive strengths, a research report has flagged.

India's garment exports in 2023-24 stood at \$14.5 billion, compared with \$15 billion in 2013-14. Between 2013 and 2023, garment exports from Vietnam have grown nearly 82% to hit \$33.4 billion while that of Bangladesh has grown nearly 70% to hit \$43.8 billion. China exported about \$114 billion of garments in the same year, nearly a quarter lower than a decade earlier.

A production-linked incentive (PLI) scheme for textiles launched by the Centre in 2021 has failed to gain traction with investors and needs significant modifications to be effective, the think tank, Global Trade Research Initiative (GTRI), has noted in a report titled "How Complex Procedures, Import Restrictions and Domestic Interests Hinder India's Garments Exports".

The report has also raised concerns about a steady rise in India's garments and textiles imports in recent years, which had grown to almost \$9.2 billion in the calendar year 2023. It warned that this tally could rise faster if the export slide is not arrested, especially with firms like Reliance Retail expected to kick off sales of Chinese brands such as Shein in the country.

"Complex procedures, import restrictions and domestic vested interests are holding up Indian garment export growth. At the root of the exporters' problem is difficulty in obtaining quality raw fabric particularly synthetic fabric," the report said, adding that Bangladesh and Vietnam do not suffer from these complexities, while Indian firms have to "waste time and money" on them.

The report, based on interactions with small, medium-sized, and large garment exporters, pointed out that recent quality control orders, or QCOs, issued for fabric imports have complicated the process of bringing in essential raw material. This is pushing up costs for exporters who have to rely on pricier options from domestic firms who dominate the market for raw materials like polyester staple fibre and viscose staple fibre. "This scenario forces exporters to use expensive domestic supplies, making Indian garments overpriced," it explained.

Moreover, the procedures laid down by the Directorate General of Foreign Trade and Customs are archaic, requiring exporters to meticulously account for every square centimetre of imported fabric, buttons, and zippers, ensuring these are used in the production process and reflected in export product description, the report said, mooting a comprehensive overhaul to change the status quo.



LIFE & SCIENCE

CHINESE SCIENTISTS FIND TRACES OF WATER IN LUNAR SOIL BROUGHT BY CHANG'E-5 MISSION

Chinese scientists studying the soil samples of the moon brought by Chang'e-5 mission found water molecules in lunar soil, according to the Chinese Academy of Sciences (CAS).

— Based on lunar soil samples returned by Chang'e-5 mission in 2020, Chinese scientists have found a hydrated mineral “enriched” with molecular water, CAS said on Tuesday.

— In 2009, India's Chandrayaan-1 spacecraft detected signs of hydrated minerals in the form of oxygen and hydrogen molecules in sunlit areas of the moon. Among its suite of instruments, it carried NASA's Moon Mineralogy Mapper (M3), an imaging spectrometer that helped confirm the discovery of water locked in minerals on the Moon.

— More discoveries were expected to follow with the return to Earth last month of China's Chang'e-6 moon mission with up to 2kg of material scooped and drilled from the moon's oldest basin on the lunar far side. However, prior to the Chang'e-6 mission, all ten lunar sampling missions in human history, including the Chang'e-5 mission, took place on the near side of the moon.

For Your Information:

— The Chang'e-5 China's first lunar sample-return mission sent back the first on-site evidence of water on the surface of the moon in 2020.

DYSON SPHERE: AN ENERGY DEVOURER

Imagine you are an astronomer looking deep into space in search of extraterrestrial life. You spot a star that is emitting infrared radiation in an anomalous fashion. You zoom in and see a swarm of solar panels covering the star like a shell, quietly collecting an enormous amount of solar energy from the star. Et voila: you have found a Dyson sphere.

The Dyson sphere is named after theoretical physicist Freeman Dyson (1923-2020), who hypothesised its existence. He said that technologically advanced civilisations will have such a tremendous demand for energy that they will have to harness the entire radiative power of a star, using solar energy collectors arranged in a sphere around the orb.

Dyson also figured that these spheres would emit excess heat from the star as infrared radiation, which he said astronomers could look for as an indirect sign of intelligent life — especially life capable of building such megastructures.

Of course, not all unusual infrared radiation emissions are indicative of Dyson spheres. In May this year, scientists set out to look specifically for the signature of Dyson spheres. They scanned 5 million stars within 1,000 light years of the earth. After analysing this data, they found seven stars whose infrared radiation they could not explain.

There is no conclusive evidence still, but might one of these seven stars have a Dyson sphere surrounding it?



HOW THE MODERN OLYMPICS CAME TO BE

The inaugural Olympic Games kicked off in Athens, Greece on April 6, 1896, paving the way for modern sports competition as we know it. Most people recognise French baron Pierre de Coubertin as the “father of the modern Olympics” but the idea well predates him, going all the way back to 1830s Greece.

On the eve of the Paris 2024 Olympic Games, here is a quick recall.

Panagiotis Soutsos’ idea to make Greece great again

Modern Greece emerged from the throes of revolution which lasted from 1821 to 1829. After centuries of foreign rule — most recently, four centuries of Ottoman control — the land once considered to be the zenith of human civilisation, lagged behind much of Europe both economically and culturally.

For Greek intellectuals of the time, independence was not only a moment to celebrate the birth of a new Greek nation, but a time for national revival. Poet Panagiotis Soutsos (1806-1868) was among the many who harkened Greece’s glorious ancient past to invoke a sense of national pride and nostalgia.

He wrote a number of poems reflecting this sentiment in the early 1830s including the famous “Dialogues of the Dead” in 1833. The poem is written from the perspective of the ghost of Greek philosopher Plato gazing at modern Greece from the underworld. “Where are all your theatres and marble statues? / Where are your Olympic Games?” says Plato in the poem.

Two years later, Soutsos wrote a letter to the Greek Minister of the Interior, proposing that March 25, the anniversary of the outbreak of the Greek War of Independence, should be declared a national holiday, marked by festivities including a revived version of the ancient Olympics. It was not until 1856 that someone else backed this idea.

Evangelos Zappas funds the ‘first’ Olympic Games

By the 1850s, Evangelos Zappas, a veteran of the Greek War of Independence, was one of the richest men in Eastern Europe. He became obsessed with Soutsos’ idea of reviving the Olympics, so much so that in 1856, Zappas proposed to the Greek government to hold the Games which he would fund from his own pocket.

After three years of lobbying, Zappas’ Olympics were held in 1859 in a city square in Athens. A number of competitions were organised, including running, discus, javelin throwing, wrestling, jumping, and pole climbing — all events which took place in ancient Greece. Winners received cash prizes.

Zappas left his fortune to fund future Olympiads. Thus, the games were held again in 1870, 1875, and 1888, with the last edition taking place in the newly-built Panathenaic Stadium (again, funded by Zappas).

William Penny Brookes and the English Olympics

Greece was not the only place where attempts were on to revive the ancient Olympics.



W P Brookes, a doctor in a small English village called Wenlock, was an ardent admirer of ancient Greece. After reading about Zappas' upcoming Olympics in Athens, in 1859, Brookes decided to organise his own games, or the "Annual Wenlock Olympic Games". In 1866, Brookes would organise the first "National Olympic Games" in London, drawing athletes and spectators from all of Britain.

But not everyone was happy with Brookes' new (and successful) venture. The British aristocracy, for instance, was vehemently against the idea of open participation. The Amateur Athletic Club, run by British aristocrats, pushed to restrict participation only to "gentlemen".

This move towards amateurism would also be copied in Greece — and consequently, the quality of these early Olympics would dip substantially, as would the interest in them.

Internationalising the Olympics

In 1880, in a bid to re-energise the Olympics, Brookes proposed the idea of an international Olympic competition open to all. Thus far, both in Britain and Greece, the Olympics had been restricted to nationals. In his letter proposing the idea, Brookes wrote that he hoped to see athletes of various nations "contending in a generous rivalry with athletes of other nations in the time-consecrated stadium at Athens".

It is this idea that Pierre de Coubertin eventually claimed as his own in 1892, after meeting Brookes and witnessing the Wenlock games in 1890. In 1894, he organised the "Congress for the Revival of the Olympic Games" in Paris. This conference, which saw the participation of delegates from across Europe, lasted several days, culminating with the proposal to hold the very first International Olympic Games in Athens in 1896.

The Athens Olympics, held under the aegis of the newly founded International Olympic Committee, would be a rousing success. Held in the Panathenaic stadium, it was the first international sports meet of its scale to ever be organised. The Games attracted athletes from 14 nations, with the largest delegations coming from Greece, Germany, France and Great Britain.

WHY PARIS OLYMPICS WILL BE THE MOST CLIMATE FRIENDLY IN HISTORY

Paris 2024 is set to be the greenest Games in history. The Games' organising committee has pledged to halve the Olympics' carbon emissions — from roughly 3.5 million tonnes each in Tokyo 2020, Rio 2016, and London 2012 to 1.75 tonnes this time around.

Olympics during climate crisis

All evidence points to the planet being in a climate emergency, driven by anthropogenic emissions of greenhouse gasses (GHG). In this context, mega sporting events, with their massive carbon footprint, might appear to be profligacy humanity can ill-afford.

At the same time, such events can also act as opportunities to further the fight against climate change. "Mega-events like the Olympic Games and the FIFA World Cup require massive public investments. Therefore, they should be good stewards of the public interest," Madeleine Orr, Assistant Professor of Sport Ecology, University of Toronto, and Founder-Industry Lead of The Sport Ecology Group, told The Indian Express.

"These events must do a better job of reducing their extraordinarily large carbon footprints, and find ways to accelerate sustainable transitions in the places they are hosted. This is not just

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important for the events' reputations, but, in a world which is on fire, important to justify them taking place," she said. In this context, Paris 2024 promises to be game-changing.

Paris 2024's climate efforts

Paris 2024 will majorly be powered by renewable energy sources like geothermal and solar power. A number of climate-friendly moves are being implemented.

Eating: Paris 2024 is trying to promote plant-based, local and sustainable food. The Food and Agriculture Organization has estimated that the meat and dairy industries account for 18% global GHG emissions. All food-related infrastructure developed for the Games will see reuse after the Olympics.

Transport: Most Olympic venues are easily accessible by public transport. Paris will run special services to ensure that tourists do not have trouble getting around. Moreover, Paris has developed 1,000 km of dedicated cycle lanes, with an additional 3,000 pay-as-you-go cycles available for rent during the Games.

Construction: Unlike London, which built eight new venues for the Olympics, and Tokyo, which constructed 11 new sites, 95% of events in the Paris Games will be held in existing buildings or temporary infrastructure. The competition venue that Paris is building, the Aquatics Centre in Saint-Denis, is solar-powered, and uses recycled, natural bio-based building material. Globally, the construction industry is among the highest GHG emitters, responsible for 37% of global emissions.

Living arrangements: While the high temperatures in Paris have forced organisers to install 2,500 temporary cooling units for athletes, instead of being AC-free as originally planned, the athletes' living arrangements are nonetheless fairly sparse. Their mattresses are made from recycled fishing nets, and beds made from reinforced cardboard. Significant amount of the furniture being used during the Games is rented, rather than bought, and will see reuse after the Olympics. The 2,800 new apartments in the Olympic Village will be converted to homes after the event.

Not completely eco-friendly

The Olympics will host 15,000 athletes, 45,000 volunteers, and 26,000 media professionals. Paris expects to host more than 10 million tourists during the Games. This means a lot of air travel, and consequently, a lot of GHG emissions.

"It's great to see the ambition [of Paris 2024] to be very low-impact, but to say that it will be 'carbon positive' is just not realistic in the context of an international sporting event with hundreds of thousands of tourists and participants," Orr wrote in her book *Warming Up: How Climate Change is Changing Sport*, published this May this year.

The organisers have said that Paris 2024 has "developed a funding programme for projects aimed at avoiding and capturing carbon emissions, which will aim to offset unavoidable Games-related emissions". Offsetting is a way for individuals or organisations to "compensate" for the environmental costs of their actions by funding projects which will plant trees, rejuvenate forests, etc.

Many experts however say that offsetting amounts to little more than "greenwashing". "It gives you a guilt-free feeling, a feeling that you have done your part to be 'carbon neutral'. In reality, many offsetting projects are not implemented, and even if they are, there is no monitoring to ensure that they continue to work as intended," climate activist Harjeet Singh, global engagement



director of the Fossil Fuel Non-Proliferation Treaty Initiative, said. “What we really need are real reductions, rather than offsetting,” he added.

Nonetheless, Paris 2024 will still go down as the most climate-friendly Olympics in history, and provide a blueprint for major sporting events in the future. As Orr put it, the developments for the Games, such as the use of rented and reused material wherever possible, and improvements in public transit infrastructure and cycle lanes, “will all offer long-term benefits to Parisians”.

SPORTING EXTRAVAGANZA

The quadrennial confluence of the world’s finest athletes, the Olympics, is beginning in Paris from Friday. The latest edition does not have the constricting environment that preceded ‘Tokyo 2020’, held in 2021 in the wake of the COVID-19 pandemic. Yet, this arrives at a time of global churn. While Russia remains banned from the Games due to its war moves, Israel will be present despite some dissenting voices over the manner in which it has dealt with the Palestinian issue. Some individual Russians will compete under a neutral banner but the nation will miss team events. The Olympics, with its competitive spirit, will offer a level playing field featuring countries like the United States and China at one end and an island-country like Fiji at the other. Being part of the event bequeaths the title Olympian to athletes fortunate to qualify for this big bash, and winning a medal only further enhances that halo. Paris, and France at large, will be tested over the next fortnight as the Olympics, even if it vests the host with soft power, often affects the economy; indeed, there was some resistance emanating from the banks of the Seine.

The U.S., China, Japan, Great Britain, Australia, Germany and France are the behemoths chasing glory. However, the Games is also about the lone athlete dishing out magic and garnering attention, as Usain Bolt did in the past. Veteran Rafael Nadal and the latest tennis prince, Carlos Alcaraz, getting excited to represent Spain in tennis is another glimpse of the eternal allure of the Olympics. That the Games has even incorporated breakdancing is a pointer to the entertainment industry finding a larger imprint while lines between sport and art constantly blur. With 204 countries, including India, besides neutral athletes and a refugee team, jostling for a place on the victor’s podium, the Olympics provides a space for smaller units to carve a niche and stun bigger opponents. Morocco defeating Argentina in a tempestuous football game has already added zest to the Games. Above all, the Olympics grants hope and redemption, and for a strife-ridden country like Afghanistan, the event also serves as a diversion. The 1972 Munich edition marred by a terror strike on the Israeli contingent remains a harrowing memory and in a world on the boil, security will be a concern for the organising committee. That some members of the Australian women’s water polo squad tested positive for COVID-19 is also a reality check while all eyes are on Paris.

AFTER BAN ON RUSSIA AND BELARUS, CALLS TO BAR ISRAEL FROM OLYMPICS GROW LOUDER

Paris is gearing up to host the 2024 Olympic Games from July 26 to August 11, when 10,500 athletes from over 200 countries will participate in 32 sports. Two nations – Russia and Belarus – will not be represented due to a ban imposed by the International Olympic Committee (IOC) following Russia’s invasion of Ukraine in 2022.

Athletes from Russia and Belarus will, however, be part of the Games, competing as individual neutral athletes (AINs) without the flags, anthems and emblems of their countries. Their participation is also subject to a thorough vetting process as per IOC’s eligibility criteria. Russia and its ally Belarus have faced global condemnation and strict sanctions over the Ukraine war.

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



However, another nation which is part of a different war has not been banned from the Olympics, faces minimal economic sanctions, and evenly split support and condemnation. Israel, whose war on Gaza has killed 38,000 Palestinians in less than 10 months, will be represented by 88 athletes in the Games.

Calls to ban Israel from participating in the Paris Olympics 2024 have emerged from several Muslim activist groups, sporting bodies, activists, and politicians.

Ceasefire demands

They argue that till Israel complies with international ceasefire demands, Israeli sport associations, including its teams, clubs, and participants, must be barred from participating in international competitions.

Days after videos of Israeli soldiers turning one Gaza's oldest sporting facilities— Yarmouk Stadium — into a makeshift camp to hold Palestinian detainees were released, the Jordan Football Association called upon the global sporting community to ban Israel from participating in popular competitions.

In February, a group of 26 French lawmakers (chiefly belonging to left-wing parties) wrote to the IOC, seeking to stop Israel from participating in the Games. Similar to Russian and Belarusian athletes, Israel's athletes must participate under a neutral flag, the lawmakers insisted.

Several human rights organisations, activists, and celebrities too have sought Israel's exclusion from the Games. Citing IOC's charter, which states that "every individual must have access to the practice of sport, without discrimination of any kind in respect of internationally recognised human rights within the remit of the Olympic Movement," groups have alleged that Israel's war has violated the rights of Palestinian athletes.

On February 28, 2022, four days after Russia invaded Ukraine, the IOC banned the participation of Russian and Belarusian athletes and officials in the 2022 Winter Paralympic Games. Calling the attack a "blatant violation of the Olympic Truce," the IOC allowed such athletes to compete as AINs.

"We are committed to fair competitions for everybody without any discrimination," the IOC said in a statement. While individual athletes who meet all anti-doping criteria and have not actively supported the war in Ukraine are allowed to compete in the Games, Russian and Belarusian teams cannot.

IOC's statement came in the wake of global sanctions by top European nations and other global powers like the U.S., Canada, Australia, and Japan. Russia was already banned by the IOC due to a state-sponsored doping programme, and its athletes had attended the 2021 and 2022 Games under the name 'Russian Olympic Committee (ROC).

Sparse protests seeking Israel's ban from the Paris Games are scattered globally. In Switzerland, protestors smeared red handprints on the IOC's office in Lausanne to highlight the humanitarian crisis in Gaza. Banners reading 'Genocide is not a sport' and 'Boycott Israel' have been displayed by pro-Palestine protestors camping outside IOC's office in Saint-Denis, outside Paris.

Palestine participation

Eight Palestinian athletes participating in the Games have been touted as a 'symbol of Palestine's resistance'. "Through this participation, we want to present the suffering of the Palestinian people



and the unprecedented killing taking place in Gaza,” said Palestine Olympic committee head Jibril Rajoub. Of the eight athletes, one secured a place through regular qualifying and seven were given special invitations.

Calls to ban Israel from sporting events is not new. Palestine-based group Boycott, Divestment and Sanctions (BDS), which has been seeking global sanctions on Israel since 2005 for its occupation in West Bank, East Jerusalem and Gaza Strip, has repeatedly called upon FIFA and IOC to ban Israel from their events. It has also condemned FIFA for sanctioning clubs which have supported Palestine.

In response to these calls for a ban, Paris 2024 Olympics Organising Committee chief Tony Estanguet told Reuters in January, “You have to stay in your place, not think that the Games are a magic wand that will solve all the problems and armed conflicts in our world.” Similarly, in March, IOC president Thomas Bach confirmed that Israel faces no threat to its Olympics status despite the war on Gaza.

Since the 1972 Munich Olympics, when eleven Israelis were killed by Palestinian militants, security arrangements for Israeli athletes have been tight. This year, arrangements have been made such that Israeli cyclists and marathon runners will compete in outside secured venues in Paris.

CHANGING RACIST PLANT NAMES: AFFRA, NOT CAFFRA

To the average admirer of the African coral tree, with its spreading crown and scarlet flowers, it might not matter much that scientists will now refer to it as *Erythrina affra* and not *Erythrina caffra*. Yet, the decision to switch from “caffra” — drawn from the slur “kaffir” which was used to describe people of African descent — to the inoffensive “affra” in over 200 species of plants, fungi and algae marks a remarkable shift, an acknowledgment that far too many species bear names that recall, and honour, a brutal past and unsavoury deeds. The resolution was passed ahead of the International Botanical Congress, which began in Madrid on Sunday, giving fresh life to a controversy over nomenclature that has long split the world of biological sciences.

For critics of any wholesale move to rename species — whether plant, mammal, amphibian or fungi — such attempts are impractical, and smack of historical revisionism and illiberalism. Those pushing for new nomenclature, however, argue that to continue using the old names would be to honour figures such as the imperialist Cecil Rhodes or George Hibbert, a slave owner, at the cost of people and histories that they sought to erase. For example, an estimated 1,500 land vertebrates in Africa are named after white European men. In some places, like New Zealand, there is even a move to revert to names used by indigenous populations long before colonisers “discovered” them.

Following the Black Lives Matter movement calls to reevaluate the place of honour still occupied by oppressive figures from the past have only grown louder. The proposals to divest species of names with a heavy colonial and racial baggage may form only a small part of this larger reckoning, but they’re a reminder that even the seemingly dispassionate realms of the sciences bear the scars of wounds inflicted long ago.



AIR POLLUTION HARMS POLLINATORS MORE THAN PESTS, STUDY FINDS

Bees and other beneficial bugs are disproportionately harmed by air pollution compared to crop-destroying pests, according to a new study. Researchers from the University of Reading analysed data from 120 scientific papers to understand how 40 types of insects in 19 countries respond to air pollutants like ozone, nitrogen oxides, sulfur dioxide and particulate matter. The study published in the journal *Nature Communications* found that pollinators — including bees and some moths and butterflies — experienced a 39% decline in foraging efficiency after being exposed to elevated air pollution levels. In contrast, plant-eating aphids and other pests were not significantly impacted.

The researchers suggest that beneficial insects — such as bees and wasps — are more affected by air pollution due to their reliance on scent-based communication. Many beneficial insects use airborne chemical signals to locate flowers, find mates, or hunt their prey.

Air pollutants can chemically alter these scent trails or interfere with insects' ability to detect them, essentially disrupting their sensory landscape. In contrast, many pests rely less on long-distance scent cues and more on direct contact or visual cues, making them less vulnerable to air pollution's effects on airborne chemical signals.

The study focused on how air pollution impacts various insect behaviour and biological aspects, including feeding, growth, survival, reproduction, and ability to locate food sources. Of all these factors, insects' ability to find food was most severely impaired by air pollution, declining by about one-third on average.

Among air pollutants, ozone emerged as particularly harmful to beneficial insects, reducing their ability to thrive and carry out their roles in the ecosystem by 35%. Ozone pollution has the most detrimental impacts and even low ozone levels below current air quality standards can cause significant damage. Nitrogen oxides also substantially impaired beneficial insects.

"Changes in invertebrate performance are not dependent on air pollutant concentrations, indicating that even low levels of pollution are damaging. Predicted increases in tropospheric ozone could result in unintended consequences to global invertebrate populations and their valuable ecological services," the researchers write.

HOW THE SAME EAR SENSES MURMURS AND WITHSTANDS DEAFENING MUSIC

A tree that is flexible enough to shake in a gentle breeze will undoubtedly be uprooted during a squall. On the other hand, a hardy tree that resists the force of a strong gale will hardly shudder during a gentle breeze. But unlike the tree, our ears can handle both ends of the spectrum.

The human auditory system, a marvel of nature, doesn't only detect the faintest sound signals but also demonstrates remarkable resilience in the face of thunderous noises. This adaptability allows us to distinguish the gentlest whispers from our loved ones and immerse ourselves in the thundering music of a nightclub.

Recent research has unveiled a fascinating mechanism that allows our auditory system to adapt to various sound environments. Just as our pupils dilate in the dark and contract in bright light, our ears have mechanisms that help us adjust to "see" in dim sound environments and protect us from harsh sound environments.



How do we hear?

At the heart of our auditory system are intricate hair cells nestled within the human cochlea. Each cochlea houses around 16,000 of these flask-shaped sensory cells, each with a cluster of hair-like projections called stereocilia. These stereocilia, arranged like a staircase from the shortest to the tallest, are the key to our hearing.

Two adjacent stereocilia are connected by a filamentous extracellular tether called a tip link. These tip links, functioning like a complex network of connections, are pivotal in our hearing process, converting sound waves into electrical signals our brain can interpret.

When sound waves reach the ear, they create vibrations in the inner ear fluid. These vibrations cause the stereocilia to bend, stretching the tip links that connect them. This stretching opens ion channels in the stereocilia that allow potassium ions to enter the hair cell and create an electrical signal. Nerve cells attached to the hair cells pick up this signal and send it to the brain, where it is interpreted as sound. This mechanism is similar to a microphone converting sound waves into electrical signals.

A mechanical circuit breaker

- The human auditory system relies on tip links, protein complexes made of cadherin-23 and protocadherin-15, which are crucial for sound perception.
- Tip links can break in response to loud noises, acting as a protective mechanism to prevent damage to hair cells in the ear.
- Unlike hair cells, tip links can regenerate, helping to preserve hearing.
- The average lifetime of a tip link complex is about 31.8 seconds, but this varies based on sound intensity and frequency.

The temporary hearing loss we might experience after a loud blast or blaring music is the result of losing multiple tip link complexes at the same time. Once the complexes re-form, hair cell function returns to normal levels. In effect, they function like a mechanical circuit breaker in the auditory system.

RISE AND SHINE: MORNING SUNLIGHT AND YOUR WELLBEING

We humans are affected by the cycle of light and darkness that occurs every day. Our bodies have a 24-hour (circadian) rhythm that is translated into physiological processes such as hormone secretion, which in turn drive our actions. To stay in synchrony with the environment, and therefore to perform the right activities at the right time, light serves as an alarm clock. This light synchronisation, photoentrainment, happens in the brain by light signals coming from the eye.

Many other species also depend on light to provide them with cues for their daily routine. When these light patterns are disrupted, their natural rhythms and behaviours can be affected. An example: tourism operators in the Maldives take boatloads of visitors out at night, and shine bright lights of about 4000 watts on the ocean surface. Biological activity in the water picks up as if it is morning, and tourists get to see whale sharks.

Our vision is enabled by the rods and cones, which are photoreceptor cells in the outer retina. The rods are very sensitive to light but are not colour sensitive and so are most useful in dim light; the



cones work best in bright light, giving us colour vision. Rods and cones convert photons of light into electrical signals, which are passed on to retinal ganglion cells. These cells process information from the retina and pass it on to the brain.

Photosensitive cells

About 20 years ago, a new class of cells that could perceive light was found in the inner retina. Called the intrinsically photosensitive retinal ganglion cells (ipRGC), these cells contain a photopigment, melanopsin, that allows them to directly respond to light. These cells have very important roles in our body's interaction with light that are not related to seeing.

Electrical impulses from the ipRGC travel to areas of the brain that are involved in sleep, alertness and mood regulation. Signals also project to the area of the brain that controls the pupils of the eyes, causing them to constrict in response to bright light.

Importantly, electrical signals travel to a part of the hypothalamus that regulates circadian rhythms. This part of the brain has long been known to be the master clock, where your body's internal clock is synchronised with the light-dark cycle in the outside world that is driven by the sun.

Morning birds

Morning diurnal preference is the classification for people who prefer early sleep and who rise early. Peak performance is earlier in the day, and the condition is associated with a reduced risk of obesity as well as better academic performance. Several studies have also shown that a pattern of earlier sleep timing is associated with a lowered risk of major depressive disorder (Scientific Reports, 12003, 2021).

Stanford neurobiology professor Andrew Huberman, in his popular podcast has pointed to the beneficial effects of low-angle light from the morning sun in resetting the circadian clock. ipRGC cells are most responsive to blue light (480 nm). The morning light has a low ratio of blue to yellow light, just enough to send a message to the hypothalamus marking the start of another circadian cycle. Sixteen hours later, your body is going to be sleepy. So go out and be in the morning light — sunny or cloudy, but don't stare at the sun! Synchronising your clock will improve your health—physical and mental.

INDUCING SLEEP WITH PILLS

Q: What chemical in tablets causes sedation and how does it work?

A: Barbiturates, derivatives of barbituric acid, are mainly used in tablets to cause sedation and hypnotic activity. The list also includes benzodiazepines and alcohol. They decrease the total REM time and proportion of sleep spent in REM sleep with enhanced amounts of NREM sleep.

REM, or 'rapid eye movement', sleep is characterised by loss of reflexes, intermittent jerky eyeball movements, brief body twitches, and irregular heart beats and blood pressure. Non-REM is a relatively deactivated phase divided into four stages, numbered 1-4.

By most physiological criteria related to the autonomic and central nervous systems, REM sleep is more like wakefulness than non-REM sleep, but drugs that cause arousal in wakefulness, such as amphetamines, suppress REM sleep.



Sedatives cause reversible depression of the activity of all excitable tissues, including the central nervous system. The exact mechanism of the action is not known. However, they are suspected to inhibit neurotransmission in the nervous system. Neurotransmission is responsible for the exchange of information between nerve cells.

In the brain, there are two types of pathways, one that activates and the other that inhibits its activities. The endogenous neurotransmitters of the inhibitory system include gamma amino butyric acid (GABA). Sedatives potentiate the action of GABA and thereby inhibit the major pathways of the brain that keep a person awake, thus resulting in sedation or sleep.

In the brain, there are two types of pathways: one that activates and the other that inhibits its activities. The endogenous neurotransmitters of the inhibitory system include gamma-aminobutyric acid (GABA). Sedatives potentiate the action of GABA and thereby inhibit the major pathways of the brain that keep a person awake, thus resulting in sedation or sleep.

Not all drugs are REM-deprivers. Some of the latest drugs reduce stage 4 of non-REM sleep. Most of the stimulants, including amphetamines, and depressants such as barbiturates and alcohol tend to reduce REM activity on an electroencephalogram.

CLEANEST PIGS EVER ARE RAISED TO GROW ORGANS FOR HUMANS

The first gene-edited pig organs ever transplanted into people came from animals born on a special research farm in the Blue Ridge Mountains — behind locked gates, where entry requires washing down your vehicle, swapping your clothes for medical scrubs, and stepping into tubs of disinfectant to clean your boots between each air-conditioned barn.

“These are precious animals,” said David Ayares of Revivacor Inc., who spent decades learning to clone pigs with just the right genetic changes to allow those first audacious experiments.

The biosecurity gets even tighter just a few kilometres away in Christiansburg, Virginia, where a new herd is being raised: pigs expected to supply organs for formal studies of animal-to-human transplantation next year.

This massive, first-of-its-kind building bears no resemblance to a farm. It’s more like a pharmaceutical plant. And part of it is closed to all but certain carefully chosen employees who take a timed shower, don company-provided clothes and shoes, and then enter an enclave where piglets are growing up.

Behind that protective barrier are some of the world’s cleanest pigs. They breathe air and drink water that’s better filtered against contaminants than what’s required for people. Even their feed gets disinfected —all to prevent them from picking up any possible infections that might ultimately harm a transplant recipient.

Several thousand people die each year waiting for a transplant, and many experts acknowledge there will never be enough human donors to meet the need. Animals offer the tantalising promise of a ready-made supply.

So far in the U.S. there have been four “compassionate use” transplants, last-ditch experiments on dying patients — two hearts and two kidneys. Revivacor provided both hearts and one of the kidneys. While the four patients died within a few months, they offered valuable lessons for researchers ready to try again with people who aren’t quite as sick.



Now the U.S. Food and Drug Administration is evaluating promising results from experiments in donated human bodies and awaiting the results of additional studies of pig organs in baboons before deciding next steps. The main challenges are how to avoid rejection and whether the animals might carry some unknown infection risk.

Twice a week, slaughterhouses ship Revivacor hundreds of eggs retrieved from sow ovaries. Working in the dark with the light-sensitive eggs, scientists peer through a microscope while suctioning out the maternal DNA. Then they slip in the genetic modifications. Mild electric shocks fuse the new DNA and activate embryonic growth.

Revivacor's first modified pig is now bred instead of cloned. If xenotransplantation eventually works, other pigs with the desired gene combinations would, too.

ICMR READY TO TRANSFER TECHNOLOGY OF A 'BREAKTHROUGH' TB DETECTION SYSTEM

The council has invited an Expression of Interest from organisations, companies and manufacturers for "transfer of technology" for commercialisation of "a CRISPR Cas-based TB detection system".

Developed by the ICMR Regional Medical Research Centre, Dibrugarh, the technology is touted as the "world's cheapest TB testing system". It can detect the TB bacterium using DNA from saliva at a very low cost. It can identify the bacterium with preliminary symptoms, and test over 1,500 samples within two hours.

"It is so simple that it can be used even in the primary health centre of a village," say researchers at the centre.

TB kills an estimated 4,80,000 Indians every year or over 1,400 patients every day. Additionally, the country has more than a million "missing" TB cases annually, which are not notified. Most remain either undiagnosed, or unaccountably and inadequately diagnosed and treated in the private sector.

A senior Health Ministry official had noted that India's efforts to achieve rapid decline in the burden of TB morbidity and mortality, towards the elimination of the infection by 2025, have plateaued.

He added that there is now a move to rework the protocol to tackle the disease, specifically TB medication and its duration, to reboot the TB-free initiative with zero deaths, disease, and poverty resulting from the disease.

Expert guidance

The ICMR has developed the "CRISPR Cas-based TB detection system" and is lawfully entitled to enter into any form of exclusive or non-exclusive agreements with eligible manufacturing companies through a defined agreement for licensing and commercialisation of the system, which shall be governed by the ICMR IP Policy, it said.

Listing out its role, the council has noted that the Dibrugarh centre will provide expert guidance and technical support for the production of the system in all phases.



VASCO DA GAMA'S TOXIC LEGACY IS NOW A 'PANDEMIC' THAT KILLS 8 MILLION GLOBALLY

What does the voyage of Vasco da Gama have to do with a commodity that is the cause of much grief and ill health across the world? The answer, in a word, is tobacco, but the story is as follows: on July 8, 1497, began the historic voyage of Vasco da Gama. This journey reshaped global maritime routes and left an indelible mark on trade and culture. Among the myriad exchanges catalysed by this era of exploration was the introduction and dissemination of tobacco, a commodity that has since impacted societies profoundly and multifacetedly.

Tobacco has a pernicious effect on the human body, contributing to a range of health issues including various cancers (lung, mouth, throat, oesophagus, pancreas, and bladder), respiratory diseases (chronic obstructive pulmonary disease, emphysema, chronic bronchitis), cardiovascular problems (heart disease, stroke, hypertension), and other conditions such as diabetes, infertility, a weakened immune system, and complications in pregnancy. Its consumption can lead to severe addiction due to the presence of nicotine, a highly addictive substance. The pervasive nature of tobacco consumption and its severe health consequences make it a global public health crisis that requires urgent and coordinated action.

Despite its "Pan Indian" use, tobacco, originally cultivated by Native Americans, was brought to Europe in the 16th Century and, soon after, introduced to South Asia by European traders and colonisers. The Portuguese, followed by the Dutch and the British, were instrumental in spreading tobacco use. Tobacco quickly embedded itself into the cultural and social fabric of South Asian societies. Yet, it is essential to remember that smoking was alien to Indian ethos and culture. Despite the linguistic diversity in India, with as many as five linguistic families (thousands of languages), none of the Indian languages have a native or original word for "tobacco". The exception in Dravidian languages is due to the functionality — or description-related coinage — for "tobacco," and there is no literary evidence about the use of tobacco before the European arrival.

Surprisingly, the economic dimensions of the tobacco menace have not been subject to debate since the colonial era. There has not been a robust enough critique of the British Raj for tobacco. Indeed, it isn't the Kohinoor that should symbolise European exploitation, but the countless lives lost to smoking that should be the true emblem of colonial greed. The introduction of tobacco in India has left a lasting legacy of addiction and disease.

Ethical and revenue considerations

Tobacco, being a drought-tolerant, hardy crop, is economically significant to the underprivileged. Today, tobacco accounts for 2% of India's agri-exports and employs more than 45 million people. The industry is a major source of revenue through taxation and exports exceeding ₹22000 crore. However, this benefit comes at a tremendous human and financial cost. The total economic cost of smoking in India, including health expenditure and productivity losses, amounts to ₹1.82 trillion annually.

Tobacco use is responsible for over 1.2 million deaths in India each year, with smoking-related diseases accounting for the majority. Tobacco is a significant contributor to the country's cancer burden, with 27% of all cancers in India attributable to tobacco use. This aspect of colonial legacy — where tobacco was a tool of economic gain for colonial powers but a source of health devastation for local populations — deserves more attention in historical discourse.



Stacking up priorities

The contemporary landscape of tobacco research in India is marked by a conflict of priorities between two premier institutions: the Indian Council of Medical Research (ICMR) and the Indian Council of Agricultural Research (ICAR). The ICMR advocates for the elimination of tobacco to mitigate its public health impact, and investing in research and policies aimed at reducing tobacco use. In stark contrast, the ICAR focuses on increasing tobacco crop yields and employing modern genetic techniques to enhance the productivity of tobacco farmers. ICAR's Central Tobacco Research Institute (CTRI) in Rajahmundry is at the forefront of this research. The organisation interest is to enhance tobacco productivity and commerce while ensuring the sustainability and quality of tobacco leaves and seeds. This is in conflict with ICMR's aspirations for a tobacco-free India, creating a significant policy and ethical dilemma.

However, the law is quite clear. Article 21 of the Indian Constitution guarantees the right to life and personal liberty, including the right to health, as an integral part of this fundamental right. Furthermore, the Directive Principles of State Policy (DPSP) under Articles 39(e), 39(f), 41, 42, and 47 mandate the state to work towards improving public health, ensuring social justice, and raising the standard of living. These provisions compel the state to prioritise the health and well-being of its citizens over the economic benefits of tobacco farming.

Will CRISPR make a difference?

In scientific innovation, gene editing technique CRISPR (clustered regularly interspaced short palindromic repeats) presents a potential solution to the tobacco epidemic. Researchers are using CRISPR to develop genetically-modified tobacco plants that are less harmful or harmless. This technology could potentially alter the nicotine content and other harmful substances in tobacco leaves, providing a safer alternative for consumers.

Recent studies have shown promise in using CRISPR to knock out specific genes in tobacco plants, thereby reducing nicotine content significantly. For example, targeting the transcription factor genes ERF199 and ERF189 resulted in an ultra-low-nicotine phenotype, with nicotine levels reaching only 2-5% of wild-type levels. Knocking out the QPT2 gene drastically reduced nicotine production but caused severe growth inhibition, making it unsuitable for agricultural use.

Additionally, targeting all six members of the BBL gene family reduced foliar nicotine levels by up to 94%. These developments highlight the potential for CRISPR to create tobacco lines with dramatically reduced nicotine content. However, further characterisation is needed to ensure these modifications do not negatively impact other important agronomic traits. The collaboration between ICMR and ICAR is crucial. By working together, these institutions can develop tobacco crops that reduce health risks while maintaining economic viability.

Surrogate advertising

The tobacco industry has shown remarkable resilience and ingenuity in circumventing regulations to curb its influence. Despite stringent advertising bans under the Framework Convention on Tobacco Control (FCTC), the tobacco lobby has employed surrogate advertising to promote its products. This involves using brand names on non-tobacco products, sponsoring events, and promoting tobacco-related imagery in media and entertainment. Such tactics undermine public health efforts and perpetuate tobacco consumption.



There is a popular misconception that “epidemic” and “pandemic” apply exclusively to infectious diseases. However, tobacco consumption perfectly fits the existing definition of a pandemic. A pandemic is characterised by its widespread prevalence, severe consequences, and the ability to affect a significant portion of the population across multiple countries. Tobacco use meets these criteria, causing over 8 million deaths worldwide annually and affecting millions more through chronic diseases and disabilities.

The scale and severity of tobacco-related diseases, coupled with its pervasive presence across the globe, justify the classification of tobacco consumption as a pandemic.

This perspective could galvanise international efforts and resources to combat tobacco use more effectively, treating it with the urgency and coordinated action typically reserved for infectious disease outbreaks.

INDIA COULD SOON ALLOW ‘GAME-CHANGING’ WEIGHT-LOSS DRUG TIRZEPATIDE: HOW IT WORKS, ITS SIDE EFFECTS

The development of various weight loss drugs has been a game changer for obesity treatment in recent years, especially in the US and Europe. But these drugs are yet to be commercially available in India, with pending regulatory clearances and high demand abroad delaying their arrival in the country.

But this might soon change. Last week, in a first, an expert committee of India’s drug regulator gave the green light to the drug tirzepatide. Following a review of this recommendation, the drug will be given final approval by the regulator, allowing its manufacturer, Eli Lilly, to launch the product in the Indian market.

Diabetes drug for weight loss

In 2017, the US Food and Drugs Administration (FDA) approved Danish pharma giant Novo Nordisk’s Ozempic, with the active ingredient semaglutide, to manage type 2 diabetes. Soon, doctors in the US saw an interesting side-effect — weight loss.

They started prescribing Ozempic off-label (the practice of prescribing a drug for a different purpose than what has been approved) to treat obesity. A social media frenzy followed, with influencers flooding TikTok and Instagram with posts about their dramatic weight loss transformations, all courtesy Ozempic.

This made Novo Nordisk explore semaglutide as a weight loss drug for people without diabetes. In 2021, the company released Wegovy, a semaglutide injection, as an FDA-approved obesity treatment. The key difference between Ozempic and Wegovy: the maximum approved dose of semaglutide is slightly higher with Wegovy than Ozempic. Currently, there is a global shortage of both drugs amid soaring demand.

How weight-loss drugs work Weight loss drug tirzepatide, marketed by US pharma giant Eli Lilly as Zepbound, is on the cusp of getting regulatory approval in India.

In November 2023, Eli Lilly, another US pharma major, got FDA approval for the drug Zepbound to treat obesity. This came just over a year after its type 2 diabetes medication, Mounjaro, was launched. Like Ozempic, Mounjaro too led to weight loss among users, and began to see rampant



off-label use. Zepbound and Mounjaro contain tirzepatide as the active ingredient. Both face shortages in the global market.

Semaglutide vs tirzepatide

The FDA has approved Wegovy (semaglutide) and Zepbound (tirzepatide) for chronic weight management in adults. These drugs can be prescribed to those who are obese (with a body mass index of over 30), or overweight (with a BMI between 27 and 30), and have at least one other health condition related to their weight (such as high blood pressure, high cholesterol, or type 2 diabetes).

Both are administered as under-the-skin injections, and are intended to be used alongside a reduced-calorie diet and increased physical activity. The dosage is increased gradually, reaching a maximum dosage of 2.4 mg for semaglutide and 15 mg for tirzepatide. This does not, however, mean that the latter is 'stronger' than the former.

How weight-loss drugs work

Semaglutide and tirzepatide are polypeptides, small proteins that boost the levels of naturally-occurring hormones in the body, including that of glucagon-like-peptide 1 (GLP-1), which control weight through the brain and digestive tract.

Higher GLP-1 levels, released in the gut, spark a reaction by stimulating neurons that alter gut function, leading to a sense of fullness. This process also taps into a brain mechanism that lights up neural pathways, triggering the sensation of satiety — the feeling of being satisfied and having had enough to eat.

They also help manage glucose levels, making them an effective treatment for diabetes.

Semaglutide only targets GLP-1 receptors. On the other hand, tirzepatide also boosts a second hormone: glucose-dependent insulinotropic polypeptide (GIP). The GIP also regulates weight through receptors in brain and fat cells. Eli Lilly claims that the combined action of GLP-1 and GIP enhance each other's effects.

This sustained weight reduction was accompanied by improvements in all prespecified cardiometabolic measures.

Zepbound got regulatory clearance in India based on data from these trials, in which Indians took part as well. But the aforementioned expert committee has imposed a crucial rider — the company will have to conduct a phase IV, post-marketing surveillance trial to scrutinise side effects that might have been missed in previous trials, and the drug's efficacy among India's diverse population.

Some side effects of the drug

According to the company, Zepbound's most common side effects include nausea, diarrhoea, vomiting, constipation, abdominal pain, indigestion, injection-site reactions, fatigue, allergic reactions, belching, hair loss, and heartburn.

Eli Lilly specifically highlights the risk of thyroid tumours, including thyroid cancer. "Watch for possible symptoms, such as a lump or swelling in the neck, hoarseness, trouble swallowing, or shortness of breath," the manufacturer says. Individuals cannot use Zepbound if they, or any



family members, have ever had medullary thyroid carcinoma (MTC), a type of thyroid cancer, or Multiple Endocrine Neoplasia syndrome type 2 (MEN 2), a rare, inherited disorder that affects the endocrine glands.

Zepbound is a prescription medicine. It cannot — and should not — be used for cosmetic weight loss.

Weight back if drug is stopped

Obesity drugs are also not one-time miracle solutions for weight loss — data from trials indicate that these drugs need to continue to be taken for their weight loss and other effects to last.

At the end of the day, obesity is a complex, chronic, and progressive disease which has to be managed throughout one's life.



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