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# CURRENT AFFAIRS FOR UPSC

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27th October to 2nd November 2024



**DreamIAS**



## INTERNATIONAL

### WHY ARE SWING STATES CRITICAL IN THIS U.S. ELECTION?

The winner of the U.S. presidential contest is selected not by a majority of national popular votes, but by a majority in the electoral college of 538, which is 270. Members of the electoral college are apportioned between the States. Most U.S. States have a “winner-takes-it-all” system that allots all electors to the candidate who gets more popular votes. So, whether a candidate has one or one million votes more than their opponent in California, for instance, all 54 electoral college votes of the State, will be awarded to him or her.

Similarly, all 19 electoral college votes of Pennsylvania will be awarded to the winner of the popular votes within that State, regardless of the margin. This system could create the anomaly of a candidate winning the election, without winning more popular votes than the opponent, nationally. That is also why the main opponents this time, Mr. Trump and Democrat Kamala Harris, are trying to turn the battleground States in their favour in the last lap of campaigning ahead of election day.

#### **Which are the key States that will play a role in picking the winner?**

Pennsylvania, Michigan, Wisconsin, Georgia, Nevada, Arizona, and North Carolina are the battleground States of 2024; and the contest between Mr. Trump and Ms. Harris is a dead heat, going by all opinion polls. The average polling error for more than five decades in the U.S. is 3.4%. In all the seven swing States, in nearly all the polls, the leading candidate has a lead well within this margin. Like the last two elections, the margins could be very narrow and these States will decide who will be the President for the next four years. It is also possible that most of these States could swing to either side, as it happened in the last two elections, rather than being evenly divided between the two.

Even a minor swing among significant voting blocs in these States could turn the tide either way. Both candidates are trying to tailor their messages, particularly targeting these States. For instance, Latinos make up nearly a quarter of Arizona’s voters. That possibly explains Mr. Trump’s recent attempts to portray his opponent as being disrespectful of the Catholic church. In Georgia, Black votes count considerably, and Mr. Trump has been trying to mobilise them behind his anti-immigration politics. Latest polling figures show Mr. Trump gaining more ground among Latinos and Blacks. Michigan, a State that turned Republican in 2016 and Democrat in 2020, has around two lakh Muslim voters. Democrats, and Ms. Harris, face a crisis of credibility among them, against the backdrop of the conflict in West Asia. They may not vote for Mr. Trump but could turn indifferent towards Ms. Harris. Mr. Trump had won North Carolina in 2016 and 2020, but Ms. Harris is making some new inroads, according to polls.

In the last stretch, there will be further concentration of firepower by both sides on the small numbers that count as big in the elections. Catching the swing voters in these States is what both candidates are focussing on now.

### HOW THE UNITED STATES’ ELECTORAL COLLEGE WORKS

The United States is the only democracy in the world where a presidential candidate who wins the highest number of (popular) votes may still lose the election. This has happened at least four



times in the past, including twice — in 2000 and 2016 — in this century. The reason is the role played by the Electoral College in the American system.

- Prior to the election, the two political parties select a slate of preferred electors in each state. The selection is based on established conventions that vary from state to state and party to party. A party's slate generally comprises long-time members and workers, or people with a personal or political affiliation with the party's presidential candidate.
- There are very few provisions in the US Constitution regarding who is qualified to be an elector. Members of Congress or any person "holding an Office of Trust or Profit under the United States" cannot be an elector.
- The Electoral College is chosen by popular vote. This is essentially what the election on November 5 is for. Ballots in many states even mention the names of the respective candidate's slate of electors.
- Two states — Maine (4 electors) and Nebraska (5 electors) — are exceptions to the winner-takes-all system. Both employ a specific form of proportional representation in which the state winner receives two electors, and the winner of each congressional district (who may or may not be the same as the state winner) receives one elector.

#### Do You Know:

- In US's unique electoral system, votes cast by the public in favour of a presidential candidate (the popular vote) are actually meant to elect that candidate's preferred electors. These electors then vote for the President after the election.
- The Electoral College is a process comprising the selection of these electors, the meeting where they vote for the President and Vice President, and the counting of the electoral votes by Congress.
- The Electoral College comprises 538 electors, and a candidate needs to secure a majority of 270 electoral votes to be elected.
- The number of electors varies from state to state. Each state has the same number of electors as the size of its Congressional delegation — one for each member of the House of Representatives plus two for the two Senators.
- California, with 54 electors, has the largest allocation in the Electoral College. Six states — Alaska, Delaware, North Dakota, South Dakota, Vermont, and Wyoming — and the District of Columbia are allocated three electors each, the smallest delegations in the college.

#### HOW THE SMALL BUT RICH INDIAN AMERICAN COMMUNITY VOTES — AND WHY

Indian Americans remain deeply connected to the Democratic Party but have been less so since 2020, according to the results of a new Carnegie survey published this week. This is despite Kamala Harris being the Democratic nominee, with a chance to become the first person of Indian origin to enter the Oval Office.

#### To what extent does the Indian American vote matter in the US presidential election?

With a population of approximately 5.2 million, Indian Americans are the second largest immigrant community in the United States, behind only Mexican Americans.



Around 2.6 million Indian Americans are eligible to vote, according to the Indian American Attitudes Survey (IAAS) 2024, published by the Carnegie Endowment for International Peace. These are “high propensity” voters, and an astonishing 96% of Indian Americans registered to vote will likely end up voting in the 2024 election, according to IAAS data.

Crucially, the “Asian Indian” ethnic group (including persons from Pakistan and Bangladesh) has a population of more than 700,000 in seven battleground states, according to the Asian and Pacific Islander American Vote (APIAVote), a non-profit research group and civic engagement advocacy. Of these 350,000-450,000 Asian Indians are eligible to vote.

The seven battlegrounds — Arizona, Georgia, Michigan, Nevada, North Carolina, Pennsylvania, and Wisconsin — are where the race for the presidency is expected to be decided. Several metropolitan areas in these swing states have large concentrations of Indian Americans — for example, in Atlanta, Georgia; Philadelphia, Pennsylvania; Raleigh, North Carolina; and Detroit, Michigan — who can potentially swing a tight race one way or the other.

Notably, in quite a few states, the community’s population is larger than the margin of victory in the 2020 presidential election.

Both Democrats and Republicans have also wooed Indian Americans for election funding. Indian Americans are less than 2% of America’s population, but their median annual household income of approximately \$153,000 (about Rs 1.3 crore) is more than double that of the country as a whole.

#### **Who are Indian Americans backing in this election?**

Roughly 47% respondents in IAAS 2024 identified as Democrats, down from 56% in the 2020 edition of the survey. The percentage of respondents identifying as Independents rose from 22% to 26%, and those identifying as Republican rose from 15% to 21%.

The survey found that 57% of respondents lean Democratic, 27% lean Republican, and 14% are “true” Independents. Using this metric, the share of Democrats has declined to 57% from 66% in 2020, and that of Republicans has risen to 27% from 18%.

This decline in support for the Democratic Party among Indian Americans may translate into voting behaviour as well.

According to the 2024 IAAS, 60% of Indian American citizens planned to vote for Harris, and 31% for Donald Trump. In 2020, 68% of Indian Americans had said they intended to vote for Joe Biden, while 22% had said that they would vote for Trump.

#### **What explains the voting preferences of Indian Americans?**

Indian American support for Democrats has been traditionally based on the perception that Republicans are intolerant towards minorities, and too influenced by Christian evangelicalism (2020 IAAS). Among those who vote Republican, the perceived weakness of Democrats in handling the economy and curbing illegal immigration, and the perception that the party is too left-wing and focused on “identity politics” have been the primary drivers of support.

The 2020 IAAS did not find a notable difference in voting intention among men and women; this year, however, a stark gender gap has emerged. About 67% of Indian American women respondents in IAAS 2024 said they intended to vote for Harris, and only 22% said Trump; these numbers for male Indian Americans were 53% and 39% respectively.



One possible explanation for this trend is a divergence in issues prioritised by men and women in the community, a trend that is seen across the American population. So, women tend to support Harris for her position on abortion rights, while strong borders and a more liberal tax regime — core Trump promises — resonate more with men.

Milan Vaishnav, a co-author of the IAAS along with Sumitra Badrinathan and Devesh Kapur, told Al Jazeera that “there is also a growing scepticism among some Indian American men voting for a female president” which is creating a “new cleavage” in the community.

Lastly, it seems that Harris’s Indian heritage has had limited impact on Indian American voters. Many Indian Americans do not identify with the Vice President who has preferred to play up her Black heritage (from her father’s side) more than her Indian one. At least 12% respondents in the 2024 IAAS said that their main reason for opposing Harris was that she “identifies more with her Black roots”.

Rohit Chopra of the Center for South Asia at Stanford University told Al Jazeera: “There is actually more enthusiasm for someone like Tulsi Gabbard or Usha Vance than for Harris... In the American mainstream, Harris is perceived as African American.”

#### EXPRESS VIEW ON ISRAEL’S BAN ON UNRWA: HYPOCRISY IN TEL AVIV

Israel’s decision to ban, by law, the UNRWA — the agency formed over 70 years ago to provide aid to Palestinian refugees — is a self-goal. The Knesset passed two bills on Monday: The first makes it illegal for Israeli officials to have any contact with UNRWA personnel and the second will prevent the agency from entering the West Bank and Gaza. In effect, the millions of Palestinians who have been injured and displaced and are facing severe health and nutrition issues will be left with little or no aid. This move comes weeks after Israel barred UN Secretary-General Antonio Guterres from entering the country. Prime Minister Benjamin Netanyahu has also called the UN an “anti-semitic swamp”. By its obduracy, Israel is compromising its diplomatic interests, as well as the humanitarian needs of Palestinians, who have suffered from the retaliation mounted after the October 7 terrorist attacks by Hamas.

Certainly, the UN system is in urgent need of reform. There is, however, a hypocrisy in using the skewed structure of the Security Council to escape consequences and censure on the one hand, and target the UN’s relief operations on the other: The US has used its veto at least 34 times in favour of Israel. Since the current conflict began, over 200 UNRWA staff have been killed. Israel contends that some of the UNRWA’s work is used as a shield by terrorist organisations. The UN has not ignored these allegations: Soon after the October 7 attacks, 16 Western countries suspended funding to UNRWA — this was restored after it sacked nine people. With Israel’s war expanding across the region to Lebanon and Iran, the attack on the UNRWA, the Secretary-General and the deaths of UN personnel close diplomatic doors when they are needed to open wider.

As Guterres has pointed out, expelling the UNRWA will not change the refugee status of Palestinians. Over a year after October 7, many of the hostages still haven’t been rescued, Gaza has become a place of unrelenting suffering. Tel Aviv’s extremism and pursuit of the chimera of “absolute security” now threaten Israel’s own national interests as well. It is only by engaging with the global community, which includes aid organisations, that there is hope of finding a road to peace.



#### Do You Know:

- UNRWA stands for UN Relief and Works Agency for Palestinian Refugees in the Near East. It was founded in 1949 to provide aid to about 700,000 Palestinians who were forced to leave their homes in what is now Israel during the 1948 Arab-Israeli war.
- The UNRWA definition of “refugee” covers Palestinians who fled or were expelled from their homes during the 1948 War.
- The UN agency operates in Gaza and the Israeli-occupied West Bank, as well as Lebanon, Syria, and Jordan — countries where the refugees took shelter after their expulsion.
- According to UNRWA’s website, it runs education, health, relief and social services, microfinance and emergency assistance programmes inside and outside refugee camps based in the aforementioned areas.
- Currently, around 5.9 million Palestine refugees — most of them are descendants of original refugees — access the agency’s services. The Associated Press reported that in Gaza, where some 85% of the enclave’s 2.3 million people have fled their homes after the latest Israel-Hamas conflict, over 1 million are sheltering in UNRWA schools and other facilities. UNRWA is funded almost entirely by voluntary contributions by donor states like the US. It also gets a limited subsidy from the UN, which is used only for administrative costs, the agency’s website said.

## UNDERSTANDING U.S.-ISRAEL RELATIONS

#### The story so far:

Within days of the October 7, 2023 attack by Hamas inside Israel, killing at least 1,200 people, U.S. President Joe Biden travelled to Israel to declare solidarity with the Jewish state. Mr. Biden described Hamas as “unadulterated evil” and stated that America “stands with Israel”. Since the October 7 attack, Israel has been bombing Gaza relentlessly and is carrying out a ground invasion. It has killed at least 42,000 Palestinians, wounded almost 100,000 and displaced almost the entire population of Gaza’s 2.3 million. There is a case against Israel at the International Court of Justice over alleged genocide. On October 1, Israel launched a ground invasion of Lebanon and has been carrying out devastating air strikes in Lebanon in the name of targeting Hezbollah, in which thousands were killed. Israel also bombed Iran’s embassy in Damascus on April 1, triggering a wave of attacks and counterattacks between the countries. Throughout this crisis, the Biden administration stood solidly behind Israel. According to one recent study by Brown University, the U.S. spent \$17.9 billion on military assistance to Israel since October 7. Biden officials have called for a ceasefire in Gaza and a diplomatic solution to the crisis in Lebanon. But at the same time, Washington continued to provide military and political support for Israel. This is not surprising given the history of the U.S.-Israel relations. Barring minor personality clashes between leaders, the U.S. has always stood behind Israel, irrespective of the latter’s actions, at least since 1967.

#### What are the origins of U.S.-Israel ties?

The U.S. had supported the idea of a Jewish homeland even before the state of Israel was declared within historical Palestine in 1948. On March 3, 1919, two years after the Balfour Declaration, in which the British government declared its support for the creation of a “Jewish homeland in Palestine”, President Woodrow Wilson said, “The allied nations with the fullest concurrence of our



government and people are agreed that in Palestine shall be laid the foundations of a Jewish Commonwealth." In 1922 and 1944, the U.S. Congress passed resolutions endorsing the Balfour Declaration. The U.S. was the first country that recognised Israel in 1948. The recognition came in 11 minutes after the proclamation. "I had faith in Israel before it was established, I have faith in it now," President Harry Truman said on May 26, 1952.

Though the U.S. offered the state of Israel support right from the latter's birth, the initial two decades of their relationship had not been very smooth. The Eisenhower administration was unhappy when Israel, along with France and Britain, launched the Suez war. Washington threatened to cut aid to Israel if it did not withdraw from the territories it had captured. The Soviet Union also threatened to fire missiles unless Israel withdrew, and finally, Israel had to pull back from the areas it seized. Similarly, in the 1960s, the Kennedy administration had voiced concerns about Israel's secret nuclear programme.

However, the 1967 war, in which Israel defeated Jordan, Syria and Egypt, all in six days, and captured swathes of territories, brought in a paradigm shift in the way Washington looked at the Jewish state. The U.S. at that time was bogged down in Vietnam. Israel defeated the Arab countries without any major help from the U.S., and the war was wrapped up quickly. Also, two of the Arab countries Israel defeated — Egypt and Syria — were Soviet allies. From then on, the U.S. started seeing Israel as a stable ally that can check the expansion of Soviet influence in West Asia.

#### **What is the current status of the U.S.-Israel ties?**

Today, Israel is an exceptional ally of Washington. The U.S. offers practically unconditional financial, military and political support for Israel, which has been occupying Palestinian territories since 1967. Israel is an undeclared nuclear power but has never faced any global scrutiny or pushback, thanks to the protection offered by the U.S. Israel is also the largest recipient of America's aid — it has received \$158 billion in aid from the U.S. since the end of the Second World War. Currently, Israel gets \$3.8 billion in military aid every year from the U.S., which accounts for about 16% of Israel's total military budget.

The U.S. is also Israel's largest trading partner, with annual two-way trade hovering around \$50 billion. Both Israel and the U.S. also have a deep defence partnership, which involves joint research and development and weapons production. For example, the Iron Dome, Israel's famed missile defence shield, uses parts built in the U.S. and the system is financed in part by the U.S. With U.S. help, Israel has built a highly advanced defence manufacturing base, which has made the country the world's 10th largest military exporter. Since 1972, the U.S. has used its veto power over 50 times to strike down resolutions critical of Israel in the UN Security Council.

From the 1973 Yom Kippur war onwards, the U.S. has also offered solid military support to Israel in its conflicts. In 1973, after Israel was taken aback by the surprise attack by Egypt and Syria, U.S. supplies proved vital for Israel to push back the enemy troops from the occupied Golan Heights and Sinai Peninsula. In 1982, the U.S. sent Multinational Forces to Lebanon after Israel's invasion of the country. After the first intifada, the U.S. supported the Oslo process and the two-state solution, but without compromising its relationship with Israel. Now, the running theme in Washington is that it supports "Israel's right to defend". The previous U.S. administration, of Donald Trump, recognised Jerusalem as Israel's capital and moved America's embassy to the disputed city. The Trump administration also recognised Israel's annexation of Golan Heights, a Syrian territory it captured in 1967 and held under its occupation ever since.



### **Were there ever tensions between Israel and the U.S.?**

While there were personality clashes between American Presidents and Israeli Prime Ministers, such clashes never led to a breakdown in what President John F. Kennedy called “the special relationship”. In the 1970s, President Jimmy Carter heaped pressure on Israel to make peace with Egypt and give concessions to the Palestinians. Israel would finally agree to sign the Framework for Peace Agreement as part of the Camp David Accords, which would set the stage for the Oslo process. During the second intifada, President George W. Bush pressed Israel to show restraint in the occupied West Bank, and in return Prime Minister Ariel Sharon accused him of appeasing the Arabs. Israel ‘will not be Czechoslovakia’, Sharon said, indirectly drawing parallels between British Prime Minister Neville Chamberlain’s surrender before Hitler in the 1938 Munich agreement and Mr. Bush. Sharon later apologised for the comparison. In 2002, Mr. Bush asked Israel to pull back from the West Bank and end a military operation “without delay”, but the Israelis never obliged. Sharon had Bush “wrapped around his little finger”, Brent Scowcroft, the former national security adviser, said in October 2004.

President Barack Obama and Israeli Prime Minister Benjamin Netanyahu had also clashed over the Iran nuclear deal. Mr. Netanyahu had visited the Republican-controlled U.S. Congress and attacked Mr. Obama over his Iran policy. But the same Mr. Obama vetoed all resolutions at the UN Security Council critical of Israel except one during his eight-year term. Mr. Obama, during his last months in office, also cleared a \$38 billion aid package for Israel. The Biden administration had earlier criticised the Netanyahu government’s plan to overhaul the country’s judiciary. But after the October 7 attack by Hamas, the U.S. has thrown its full weight behind the Netanyahu government’s war on Gaza.

### **Why does the U.S. always back Israel?**

One explanation is that Israel’s strategic value in a volatile yet critical region makes it appealing for Washington. During the Cold War, the U.S. saw Israel as a powerful bulwark against possible Soviet expansion in the Arab world. After the Cold War, when the U.S. started becoming more and more involved in West Asia, it continued to see Israel as a force of stability, along with Saudi Arabia and Egypt. Strategic value explains a close partnership or alliance, like America’s relationships with Japan, South Korea or Germany. A host of other factors, including America’s public opinion, electoral politics and the powerful Israel lobby in the U.S., play a role in shaping the country’s Israel policy.

Historically, Israel has enjoyed near unanimous support in the U.S. Congress, and a vast majority of Americans have favourable views about Israel.

American Jews and evangelical Christians are two powerful, politically active groups in the U.S. They are important constituencies for both parties and they are both pro-Israel. Then there’s a powerful Israel lobby in the U.S., which according to John Mearsheimer and Stephen Walt, heavily influences U.S. policy towards Israel. The lobby helps amplify pro-Israel voices, backs pro-Israel politicians and works toward playing down or neutralising voices critical of Israel, they argue in their 2006 essay “The Israel lobby”, in London Review of Books.

The American Israel Public Affairs Committee (AIPAC), a powerful pro-Israel lobbying group, hosts top leaders from both countries, including Presidents, Senators and Prime Ministers, for its annual gatherings. Pro-Israel groups also support both parties in the U.S. financially. For example, during the 2020 campaign, pro-Israel groups contributed over \$30 billion (63% of which went to the Democrats and the rest Republicans), according to OpenSecrets.org. Besides, there are strong





ties between the military industrial complexes of both countries. Therefore, all these factors together — Israel’s strategic value, America’s domestic politics, the presence of the pro-Israel lobby and military-industrial interplay, make sure that there’s an institutional consensus in the U.S. about its relationship with Israel, irrespective of which party or President is in power in Washington D.C.

## ESCALATION LADDER

The Israeli air strikes on Iran on Saturday opened a new phase of the unfolding regional conflict between the two key players in West Asia. This is not the first time Israel has carried out an attack inside the Islamic Republic. It has targeted Iran’s nuclear programme and killed its nuclear scientists. In April, Israel attacked an air defence system in Isfahan in retaliation against a direct Iranian missile and drone attack. In July, Ismail Haniyeh, the political chief of Hamas, was killed in Tehran. But Israel has never laid claim to any of these attacks. This time, however, Israel announced the strike while its fighters were in Iran’s air space. The targets were Iran’s air defence and missile and drone manufacturing, and storage facilities in at least three provinces, including Tehran, according to preliminary reports. The multi-wave, hours-long strike leaves a grim picture about Iran’s air defence. Iran’s state media initially played down the impact, claiming that Iran had successfully thwarted the attack. But after Ayatollah Khamenei, the 85-year-old Supreme Leader, said Tehran should neither exaggerate nor downplay the damages caused by the attack, Iran said it “will use all available tools to deliver a definite and effective response to the Zionist regime”.

There is no parity between Israel and Iran when it comes to conventional military capabilities. Israel, the only nuclear power in West Asia, has U.S. protection and supplies. The Israeli Defense Forces fly the F-35, one of the world’s most advanced fighter jets, and have a multi-layered defensive shield. Iran is practically on its own. It has been under U.S. sanctions for decades. Its closest partners, Russia and China, have no appetite to get involved. Its axis of resistance, including Hamas and Hezbollah, is under fire. So, Israel clearly has an edge in long-distance warfare. Yet, Iran showed a greater risk appetite this year than in the past with two direct attacks on Israel. Its militias may be under attack but are not out, and can continue to bleed Israel by a thousand cuts. And in the event of an all-out war, Iran can weaponise the critical arteries of energy trade in the Gulf, plunging the world economy into darkness. Such an outcome is in nobody’s interest, which also explains why the U.S. dissuaded Israel from targeting Iran’s critical infrastructure. Iran might be tempted to retaliate, but that would only prolong the cycle of violence, taking the region a step closer to an all-out war. Instead, Iran, in the larger interests of itself and the region, should show strategic restraint. But one side’s restraint alone does not bring peace. It was Israel that took the war to Iran by attacking the Iranian embassy in Damascus on April 1 this year. For stability in West Asia, both sides should stay away from directly targeting each other.

## EXPRESS VIEW ON THE SILENCING OF AFGHAN WOMEN: APARTHEID IN KABUL

A bird may sing in Kabul, but a girl may not, and a woman may not in public,” actor Meryl Streep had spoken of the plight of Afghanistan’s women under the Taliban regime at the UN General Assembly in New York in September. She urged the international community to take action against the systematic leaching of the freedoms of women and girls in a country where “a squirrel has more rights” than them. In the three years since the Taliban came to power in Afghanistan, women have been barred from secondary and higher education, access to public parks, employment and reproductive rights. They cannot leave home unless fully covered, nor sing or speak aloud in public. The Taliban has now appended another diktat to this draconian repression — they cannot



be heard praying by another woman even in passing because a woman's voice is meant to be "awrah" (private).

The scars of such totalitarianism run wide and deep. A UN policy paper released in August estimates "that the Afghan economy will lose USD 9.6 billion, equivalent to two-thirds of today's gross domestic product, by 2066 if the suspension of women's access to higher education remains in place", that there may be "correlations between the bans on women's and girls' education and an increase, by 2026, in early childbearing among Afghan girls by 45 per cent and risk of maternal mortality by at least 50 per cent". But more than that, this targeting of the rights, lives and bodies of women points at a culture that seeks to corrode their resilience and existence.

The latest decree in Afghanistan is not just another transgression of the fundamental rights of an individual, it strikes at one of the last few comforts available to women in public spaces in the country — the solidarity of an amorphous sisterhood, the solace of a voice raised in prayer. And yet, from Malala Yousafzai's defiance — her determined pursuit of education in Swat Valley became the reason for her to be shot at by the Taliban in Pakistan as she returned from an examination in 2012 — to the Iranian women's assertions of jin jiyān azādi (women, life, liberty) in the wake of the death in police custody of Mahsa Amini in 2022 — she was arrested for an alleged breach of the Iranian government's dress code for women — if there is anything that history has shown, it is this: That years of rage and deprivation will make themselves felt; that gender apartheid is not merely about women's rights but about universal dignities. And that the caged bird will continue to "sing of freedom".

## DISSENT IN THE MOUNTAINS

The Pashtun ethnic community, the second-largest demographic group in Pakistan, has complained about marginalisation in the country for decades. The Pashtun Tahafuz Movement (PTM), which translates to Pashtun Protection Movement, is a grassroots organisation focused on the rights of the community, especially in the mountainous Khyber Pakhtunkhwa province and tribal areas. The movement advocates for the protection of the community from persecution.

On October 6, the Pakistani government banned the PTM under anti-terror laws, citing its involvement in activities that are "prejudicial to the peace and security of the country".

Amnesty International criticised the ban, calling it an "affront on the rights to freedom of association and peaceful assembly in the country". "For years, the Pakistani authorities have suppressed such movements from marginalised regions by resorting to unlawful use of force, enforced disappearances, and media bans on the coverage of protests or rallies," Babu Ram Pant, Amnesty's Deputy Regional Director for South Asia, said.

The PTM was established in 2014 as the Mahsud Tahafuz Movement by students to remove landmines from northern Pakistan, which is home to Pashtuns and other local tribals. The group rose to prominence in 2018 during the protests against the killing of Nageebullah Mehsud, a young Pashtun, by the police in Karachi. The group rebranded itself as the PTM, demanding protection against extrajudicial killings.

### Hotbed of militancy

The PTM is mostly active in the Khyber Pakhtunkhwa region near the Afghanistan border, which has been a hotbed of militant activities since the days of 'Afghan jihad' in the late 1970s. The region



was also previously a part of the Federally Administered Tribal Areas, commonly called FATA, which existed until 2018.

The group is led by Manzoor Pashteen from Waziristan, who has helped spread the movement across Pakistan, and open branches in other countries, such as Germany.

Mr. Pashteen was booked on terrorism charges in 2022 after he criticised Pakistan's armed forces. He was arrested in December 2023 after his security guards allegedly shot at the police.

In 2018, Mehsud's killing inspired a wave of protests in Pakistan, a large part of which were led by the PTM. The group gained massive support from its rallies over the years, which were attended by thousands who believe that violence has destroyed Pashtun areas in both Afghanistan and Pakistan.

The latest ban on the PTM was placed ahead of the Pashtun National Jirga (court), an unofficial gathering that aims to "uphold the principles of justice, equality, and democratic governance within the Pashtun community". Led by the PTM, the three-day "jirga" started on October 11 and invited people to preserve the Pashtun heritage and be a part of a "democratic process to shape the destiny of the nation".

The event was held even though the PTM was outlawed and was attended by Khyber Pakhtunkhwa Chief Minister Ali Amin Gandapur and Manzoor Pashteen.

The demands of the jirga included withdrawal of Pakistani military as well as terrorists from Pashtun-inhabited areas within two months.



**DreamIAS**



## NATION

### FIRST INDIANS IN CANADA: THE STORY OF THEIR STRUGGLE AND RESILIENCE

- “Perhaps it was fate. In 1897, some British-Indian soldiers from Punjab, part of an official delegation from Hong Kong, set sail on the *RMS Empress of India* to London to celebrate Queen Victoria’s diamond jubilee. On the way, they docked at Vancouver in British Columbia. Among the soldiers was Kesur Singh, a battle-hardened Risaldar Major in the 25th Cavalry of the Frontier Force who is today considered the first Indian settler in Canada.”
- “Five years later, on June 3, 1902, another batch of Indian soldiers sailed into Victoria Harbour aboard the *RMS Queen of Japan*. Most of them were enterprising men from villages in Punjab’s districts of Jalandhar, Ferozepur, Ludhiana, Amritsar and Gurdaspur. They liked what they saw, as did the locals, who seemed intrigued by their turbans. “Turbaned Men Excite Interest,” screamed the headline of a local paper. Between 1904 and 1908, the number of migrants from Punjab surged from 50 to 5,000.”
- “Initially, they escaped the racial wrath aimed at the Chinese and Japanese. But as the recession struck, locals began to resent them.”
- “Soon after the race riots of 1907, many Indians were thrown out of their jobs and homes, scores were bullied on the streets, and the community was often reviled by the local media. They were also stripped of their right to vote. But they persevered, finding strength in the Khalsa Diwan Society. Established in Vancouver in 1906, it built Canada’s first gurdwara, which was also the first in North America.”
- “Despite their hardships, the Indian community often protested against this discriminatory treatment in Canada. Guru Dutt Kumar tried to give South Asians a voice through the newspaper *Swadesh Sevak*. Bhag Singh, the president of the Khalsa Diwan Society, visited India to pressure the government to take action. Community members also took to the streets to protest their conditions.”
- “Despite this unrest, more Punjabis migrated to Canada in the 1920s after restrictions on bringing women and children were lifted. This marked the beginning of what is often referred to as “Canadianization.”

#### Do You Know:

- The bilateral ties between India and Canada are long-standing and significant. Canada is home to a high percentage of Sikhs. However, the two countries’ bilateral relations have been affected by various issues, such as Khalistani separatism and Canada’s position on human rights in India. These issues have led to increased tensions and have impacted diplomatic interactions.

### KING CHARLES, CAMILLA VISIT HOLISTIC HEALTH CENTRE IN BENGALURU

Britain’s King Charles III and Queen Camilla visited a Bengaluru-based luxury wellness retreat for a three-day rejuvenation session. This was their first trip to India since he ascended the throne.

The couple quietly arrived at the Soukya International Holistic Health Centre on October 27 and left on Wednesday morning. The King, who was recently diagnosed with cancer, planned this rejuvenation on the advice of his medical team after all the chemotherapy sessions. While the

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



rejuvenation sessions were similar to those provided to other high-profile guests, therapies were decided based on his health. “The sessions were for rejuvenation, detoxification and strengthening the immune system,” sources said.

King Charles, who had celebrated his 71st birthday at Soukya in 2019, was visiting the Centre for the second time while his wife has stayed at the Centre nine times so far.

The King, who believes in integrative medicine, has a personal interest in a holistic approach to health, organic farming and eco-friendly practices. His main interest is in integrative medicine and he is also patron of the Faculty of Homeopathy in the U.K. He was also a patron of the British Association for Holistic Medicine. In 2018, with Prime Minister Narendra Modi, he inaugurated an AYUSH centre in London.

#### **South Indian diet**

The royal couple stayed at the royal presidential suite at the centre. They were put on a South Indian diet comprising vegetarian organic food, including salads and soups. The couple was said to be fond of idly, dosa and organic soups apart from organic tender coconut water, pomegranate juice and mango pulp juice.

As they were fond of organic Mallika mangoes grown on the premises of Soukya, the mangoes were being delivered to their palace every year.

Sources said the couple’s daily routine began with a yoga session in the morning, followed by breakfast and then rejuvenation therapies before lunch.

Soukya is working on expanding its base to Portugal.

“The royal couple expressed their happiness over our expansion plans,” said holistic health practitioner Issac Mathai, who runs the luxury wellness retreat.

#### **U.S. REPATRIATES 1,100 INDIANS WHO TRIED TO ENTER IT ILLEGALLY**

The United States has repatriated 1,100 Indians over the past year for trying to enter the U.S. illegally, said a senior official from the Department of Homeland Security (DHS). The official added there has been a “steady increase” in the number of Indians in recent years who have been repatriated from the United States.

Briefing journalists on Tuesday, Royce Murray, Assistant Secretary for Border and Immigration Policy at the DHS, said she had travelled to India last week to witness the flight that flew illegal immigrants back to India. “Let me start by saying that in fiscal year 2024, which just concluded at the end of September, the United States repatriated over 1,100 Indian nationals,” said Ms. Murray in her remarks at the briefing.

The remarks from the official came days after the DHS flew a “large-frame charter removal flight” on October 22 to repatriate Indian nationals “who did not establish legal basis to remain in the United States”. That move was aimed at reducing and deterring “irregular migration” to the U.S., the Department of Homeland Security had said.



### 'Tough consequences'

Ms. Royce said the flight was part of the DHS's initiative to "enforce U.S. immigration laws". She reiterated that there would be "tough consequences" for those who try to enter the U.S. unlawfully.

Ms. Murray further confirmed that the special flight that repatriated Indian nationals on October 22, 2024, landed in Punjab though she could not provide specific details about the States that supply most of the U.S.-bound illegal immigrants from India.

The American official pointed out the U.S.-Mexico and U.S.-Canada borders as the two areas that are being chosen by Indian nationals to enter the U.S. illegally. People with visas who have overstayed in the United States are also liable to be repatriated, said the official. She also specified that the deportations were not related to the recent controversy over the allegation against a Government of India official for reportedly hiring a professional hitman to assassinate a pro-Khalistan figure.

### 'Important partner'

Ms. Murray described the Government of India as an "important partner" and cautioned against human smuggling organisations that try to send Indians to the U.S. She said that illegally crossing the U.S. borders may lead to deportation and a "minimum five-year bar on re-entry to the United States". She also said that "recidivists" or those who make several attempts to enter the U.S. illegally would face criminal prosecution. Ms. Murray also revealed that "India has certainly been" the "top country of migration to the United States" from South Asia.

## TOWARDS EUROPE

The back-to-back visits to India by German Chancellor Olaf Scholz and Spain's Prime Minister Pedro Sánchez indicate an attempt by New Delhi to engage with Europe's biggest economies bilaterally. While Mr. Scholz's visit was a scheduled engagement for the bi-annual Inter-Government Consultations, this was his third visit since 2023; Prime Minister Narendra Modi had visited Germany in 2022. Thus, there were MoUs on innovation and technology, skilling and mobility, and green energy cooperation, as well as improving trade, pegged at \$26 billion, with about \$27 billion in German investments. The conversation over trade and investment intensified with both leaders attending the Asia-Pacific Conference of German Business, a first in India, amidst an attempt by German businesses to reduce their exposure in China. The two-day visit of Mr. Sánchez (officially called the President of the Government of Spain) shone a spotlight on unnoticed India-Spain bilateral ties. Trade is nearly \$10 billion, and Spain is India's 16th largest investor. Despite its relatively lower stakes in India's economy, Spain is increasingly seen as a technology and engineering partner; one of the MoUs signed was for rail transport. The highlight of the visit was the inauguration of an Airbus-Tata private sector plant to assemble C-295 aircraft for the Indian Air Force. It did not go unnoticed that the visits were scheduled close to each other, even as Germany and Spain are competing for defence deals, indicating New Delhi's desire to diversify its options.

The timing of the visits followed just after Mr. Modi's Russia visit for the BRICS summit, and his meetings with Russian President Vladimir Putin and Chinese President Xi Jinping, which show how India continues to balance ties amid the Russia-Ukraine conflict. India expressed deep concerns over the loss of life in the Ukraine conflict and the need for lasting peace, in the joint statements with Germany and Spain. But the statements differed to a degree in the paragraphs on



the West Asian crisis. The statement with Germany squarely condemned Hamas for its actions on October 7 last year, and called for the immediate release of Israeli hostages. The statement with Spain did not name Hamas, and emphasised the need to protect civilians and for all parties to comply with international law. Spain has taken a step away from other European countries by recognising Palestine and blocking all shipments of armaments including from India to Israel. It is important that India continues to engage with European countries individually, as well as with the European Union, especially with such evidence that even the closest partners have nuanced differences on geopolitical issues of the day.

## HOW WILL LAC AGREEMENT PAN OUT ON BORDER?

### The story so far:

On October 21, Foreign Secretary Vikram Misri announced that an agreement had been reached with China on “patrolling arrangements” along the Line of Actual Control (LAC) in the India-China border areas, leading to “disengagement and a resolution of the issues that had arisen in these areas in 2020.”

### What is happening on the ground?

Disengagement is underway in full swing at Depsang and Demchok in eastern Ladakh. Armies of India and China are in the process of removing all temporary and semi-permanent structures that were set up since April 2020, Army sources said. The entire process is expected to be completed by October 29. Patrolling will resume in both areas by month-end and both sides will “coordinate” to avoid face-offs.

The agreement was reached after a series of talks at the political, diplomatic, and military levels. A broad framework agreement was reached first at the diplomatic level before a detailed technical agreement for ground implementation was concluded between the Corps Commanders of the two countries last Monday. This is only with respect to the last two remaining friction points — Depsang and Demchok — and there is no change in status at the other friction points where buffer zones were set up since the disengagement from 2020-2022.

Since April 2020, the Chinese People’s Liberation Army (PLA) has amassed a large number of troops and armaments in eastern Ladakh and other areas along the 3,488 km LAC. The PLA moved into Indian territory and built fortified structures and defences, in an attempt to permanently alter the status quo on the ground. While there are differences in perception of the alignment of the LAC, both sides have, over the years, concluded a series of agreements to maintain peace at the border.

On May 5, 2020, clashes erupted on the north bank of Pangong Tso in which over 70 Indian soldiers were injured. The norm was that the Indian Army would patrol the area up to Finger 8, and the Chinese ingress blocked this routine. On May 9, 2020 clashes were reported at Naku La in north Sikkim. India responded by mobilising additional troops and equipment to match the Chinese build-up. Since then, both sides have amassed over 50,000 troops on each side, deployed a range of long-range firepower and equipment, and have undertaken massive infrastructure build-up.



### **What about Arunachal Pradesh?**

According to official sources, there was also an understanding over Yangtse in Arunachal Pradesh “that Chinese patrols will be allowed like before and their movement will not be blocked.” Yangtse in Tawang is one of the identified disputed areas between the two countries and has witnessed consistent transgressions since 2011.

On December 9, 2022, Indian soldiers clashed with the Chinese resulting in injuries. This was the first such incident since June 15, 2020, when 20 Indian soldiers were killed in a clash with the Chinese PLA at Galwan. The face-off led to a physical scuffle in which the Indian Army prevented the PLA from transgressing into Indian territory, Defence Minister Rajnath Singh had said in a statement. Defence sources had stated then that in several areas along the LAC in the Tawang sector, both sides patrol the area up to their claim lines, a trend since 2006.

Army sources denied any “quid pro quo” in the latest agreement but admitted that talks are on in all sectors along the LAC.

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

The disengagement process at five friction points was completed in September 2022. Depsang and Demchok proved to be tricky, and the latest agreement on disengagement brings hope for the next steps, which are de-escalation and de-induction. Details on new patrolling norms will have to be worked out to remove the buffer zones and resume patrolling as earlier.

Sounding a cautionary note on this, Army Chief General Upendra Dwivedi said last week they are “trying to restore” trust, that “we are not creeping” in the buffer zones created and to reassure each other. “... As we restore the trust, the other stages will also follow through soon,” he added. Former diplomats and military officers also advised caution on the continued presence of buffer zones which are in the Indian territory.

The current agreement, Army sources said, will restore the ground status to one that existed before April 2020 at Depsang and Demchok. This means that the Indian Army will again be able to patrol up to the Patrolling Points (PP) 10, 11, 11A, 12, and 13 in the strategic Depsang area which have been off limits since the stand-off.

### **How many patrolling points are there?**

There are 65 PPs starting from Karakoram pass to Chumur which are to be patrolled regularly by Indian forces. According to one of the research papers submitted at the police conference in January 2023, “Out of 65 PPs, our [India’s] presence is lost in 26 PPs due to restrictive or no patrolling by the Indian Security Forces (ISF). Later on, China forces us to accept the fact that, as such areas have not seen the presence of ISFs or civilians since long, the Chinese were present in these areas. This leads to a shift in the border under control of ISFs towards Indian side and a buffer zone is created in all such pockets which ultimately leads to loss of control over these areas by India. This tactic of PLA to grab land inch-by-inch is known as ‘Salami Slicing’.”

This underscores why patrolling is critical along the LAC, particularly in the strategic Depsang plains. On one side, the PLA ingress threatens Indian positions at Daulat Beg Oldie (DBO) by bringing Chinese troops closer to the 255 km-long crucial Darbuk-Skyok-DBO road. Also, Depsang is next to the Karakoram pass overlooking the strategic Saltoro ridge and Siachen glacier, which former Army Chief General Manoj Naravane had termed a “point of collusivity” between China and Pakistan.





Defence sources have noted in the past that while PPs, benchmark locations mutually agreed to by both India and China, are sacrosanct, the perception of the LAC is not. The PPs, largely located on the Limit of Patrolling, have been in vogue since 1996, based on the China Study Group guidelines, they added.

The traditional grazing grounds have served as pastures for the semi-nomadic community of Changthang region (Rebos) and given the scarcity of the rich pastures, they would traditionally venture into the areas close to the PPs. “Since 2014, enhanced restrictions on the grazing movement and areas have been imposed on the Rebos by ISFs and this has caused some resentment against them,” the paper noted. The issue of grazing grounds has been a major friction point between India and China and the latest agreement addresses that in the Demchok area.

In talks between Prime Minister Narendra Modi and Chinese President Xi Jinping at Kazan, it was agreed that the Special Representatives on the boundary question, the apex mechanism to find a political resolution, are expected to meet at an early date to take forward the stalled process.

#### **Question of patrolling**

The patrolling pact announced by Foreign Secretary Vikram Misri on Monday is the key pillar of the agreement.

Patrolling is one of the key elements of border management between India and China. Since there is no physical line on the ground that corresponds to maps, Indian troops are expected to go up to the Indian perception of the border before returning to base.

Typically, soldiers either walk or drive up to the patrolling points and leave behind a sign of their presence there. This could be anything Indian — perhaps an empty packet of cigarettes or a matchbox made in India.

### **INDIA-CHINA LAC AGREEMENT: WHAT THIS MEANS, WHY EXPERTS ARE ADVISING CAUTION EASTERN LADAKH**

\* If the border personnel of the two sides come to a face-to-face situation due to differences in the alignment of the LAC or any other reason, they shall exercise self-restraint and take all necessary steps to avoid an escalation of the situation.

\* Throughout the face-to-face situation, neither side shall use force or threaten to use force against the other.

\* Both sides shall treat each other with courtesy and refrain from any provocative actions.

\* Neither side shall put up marks or signs on the spots.

#### **Contours of agreement**

\* It is learnt that the two sides have agreed to restore patrolling rights to each other in the Depsang Plains and Demchok region — these are areas where the problems are called legacy issues, predating the 2020 Chinese incursions. This means that Indian troops can patrol up to patrolling point (PP) 10 to 13 in the Depsang Plains, and in Charding nullah of Demchok.

\* The previous disengagement at friction points such as Galwan Valley, north and south banks of Pangong Tso, Gogra-Hot Springs area have not been reopened for negotiations.



- It marks the first step of a three-step process — disengagement, de-escalation and de-induction of troops in the border areas.

**Do You Know:**

- The Line of Actual Control (LAC) is the demarcation that separates Indian-controlled territory from Chinese-controlled territory. India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.
- It is divided into three sectors: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.
- This also marked the completion of disengagement from all friction points of the stand-off that began in May 2020. Following this, the two sides will exchange sweets at all five Border Personnel Meeting (BPM) points, on the account of Deepavali, along the Line of Actual Control (LAC) on Thursday.
- There are five BPM points along the LAC: Bum La and Kibithu in Arunachal Pradesh, Chushul and Daulat Beg Oldi in Ladakh, and Nathu La in Sikkim.

**JUSTICE K.S. PUTTASWAMY, A CHAMPION OF PRIVACY WHO CHALLENGED AADHAAR, DEAD**

Justice K.S. Puttaswamy, who disabused the government of the notion that privacy is a privilege of the affluent, died at the age of 98 in his Bengaluru residence on Monday.

The former Karnataka High Court judge, whose faded black-and-white photograph on the Karnataka High Court website shows a dapper suited man in a striped tie, became a key petitioner in the Supreme Court years after his retirement in 1986.

Justice Puttaswamy was born on February 8, 1926. He went to Maharaja's College, Mysore and later obtained a law degree from the Government Law College, Bengaluru.

He was enrolled as an advocate in 1952 and appointed a judge of the Karnataka High Court in November 1977. He had initially challenged the Aadhaar identity scheme. He said its biometric registration process and linkage to public welfare and essential subsidies amounted to sheer violation of the citizens' right to privacy. The government had poo-hooed the challenge as the flighty imagination of urban elitists.

Speaking to The Hindu, Justice Puttaswamy had said the Aadhaar project "infringes upon our right to privacy, which flows from Article 21 that deals with the fundamental right to life".

The nine-judge Bench agreed with the retired High Court judge in a unanimous judgment in August 2017. Justice Rohinton Nariman wrote privacy was not an elitist construct. The desire for privacy was fundamental to every human being, rich or poor.

Justice D.Y. Chandrachud, in his separate opinion, termed privacy a "natural" fundamental right inseparable from the human personality.

Justice Puttaswamy's litigation to champion privacy touched every walk of life. The verdict became instrumental in the abolition of adultery as a crime.



At one point, the top court had to even deal with an argument that the right to privacy subsisted even after death in a case concerning the verification of the fingerprints of former Tamil Nadu Chief Minister J.Jayalalithaa from her Aadhaar data.

In the Pegasus spying case, the court observed that the snooping exercise had widely impacted the rights to privacy and freedom of speech of ordinary citizens.

## A SERVANT OF JUSTICE

Chief Justice of India-designate Sanjiv Khanna hails from a legacy of which the shining point was a solitary dissent. That of his uncle, Justice Hans Raj Khanna, a Supreme Court judge who sacrificed his Chief Justiceship of India in 1977 to uphold the fundamental right of personal liberty and rule of law in the dark years of Emergency.

The elder Justice Khanna defied the then powerful Indira Gandhi government in the infamous ADM Jabalpur case or the habeas corpus case, as it is popularly known, to champion the right of citizens to challenge preventive detention without due process.

Finding himself alone on the five-judge Bench, Justice Khanna had quoted U.S. Supreme Court Chief Justice Charles Evans Hughes in his dissenting opinion in 1976 that a dissent in a court of last resort is an appeal to the brooding spirit of the law, to the intelligence of a future day.

Nearly half a century later, history and time have given Justice Sanjiv Khanna a shot at the Chief Justiceship of what is one of the most powerful Supreme Courts in the world at a time when bail jurisprudence is fighting to keep its head above the water. The recent past has seen journalists, activists, poets and Opposition leaders detained under controversial laws like the Unlawful Activities Prevention Act and the Prevention of Money Laundering Act.

Justice Sanjiv Khanna takes over as the 51st Chief Justice of India on November 11 for a short tenure of six months till his retirement in May 2025. He is known as a low-profile and strict judge—a man who shuns the limelight and has hardly given bytes to the media. He will be closely watched while steering the course of a judiciary waging a daily battle with burgeoning pendency, unceasing inflow of high-stakes cases, both commercially and politically-sensitive, and a combative Executive often found reluctant to make timely judicial appointments.

While the elder Justice Khanna was superseded by his junior, Justice M.H. Beg, for Chief Justiceship in 1977, the nephew was appointed to the Supreme Court in 2019 over 32 judges of the High Courts senior to him. Justice Sanjiv Khanna was ranked 33 in the combined seniority of High Court Judges on all-India basis at the time of his appointment as an apex court judge.

### Early career

Born on May 14, 1960, Justice Khanna began his legal practice in the hard-boiled atmosphere of the district courts of the national capital in 1983. His practice covered various fields including constitutional, direct taxation, arbitration, commercial, company, land and environmental laws in the Delhi High Court. He was a senior standing Counsel for the Income-Tax Department. He was elevated as an Additional Judge of the Delhi High Court in 2005 and made a Permanent Judge in 2006.

In the past five years as Supreme Court judge, Justice Khanna's experience on the Bench was varied. He was part of the Bench headed by Chief Justice Gogoi which heard on a Saturday, April



20, 2019, sexual harassment allegations levelled by a former Supreme Court staffer against the Chief Justice. His court refused to intervene in a case against the elevation of Madras High Court judge, Justice Lekshmana Chandra Victoria Gowri.

Earlier this year, he headed the Bench which granted interim bail to former Delhi Chief Minister Arvind Kejriwal to campaign in the Lok Sabha polls, holding that his rights to life and liberty were sacrosanct. Recently he made a point while hearing petitions challenging the inclusion of 'secularism' and 'socialism' in the Preamble through the 42nd Amendment, that secularism had always been a part of the Constitution and was an ingredient of its Basic Structure.

As Justice Khanna assumes the duties of the Chief Justice in the "people's court", it is to be seen if he embodies his uncle's words of farewell quoted from Harold Laski's tribute to Justice Oliver Wendell Holmes about what makes a great judge: "He must be a servant of justice not its master, the conscience of the community and not of its dominant interests... He has to be in the great world and yet aloof from it".

#### EXPLAINED: SC RULES THAT AADHAAR CANNOT BE USED AS PROOF OF DATE OF BIRTH

The Supreme Court on Thursday (October 24) held that Aadhaar cards cannot be used as proof of age, given that other official documents such as the School Leaving Certificate serve the purpose.

The ruling has raised questions on the purpose of Aadhaar, which has been described as a "universal identity infrastructure" by the Unique Identification Authority of India (UIDAI), tasked with issuing Aadhaar numbers.

#### **Why did the court issue this ruling? And how has Aadhaar evolved since the first cards were issued?**

##### Age proof required to claim compensation for motor vehicle accident

A Supreme Court bench comprising Justices Sanjay Karol and Ujjal Bhuyan was tasked with determining the compensation to be given to the family of a man named Sika Ram who died following a motorcycle accident. In April 2015, the Motor Accident Claims Tribunal in Rohtak, Haryana, directed the insurance company to pay compensation of Rs 19,35,400.

Compensation in cases of death under the Motor Vehicles Act, 1988 (MVA), is determined by certain factors including the income and age of the deceased, as well as the number of dependants. The age is used to determine the multiplier, a numerical value that reflects future financial contributions from the deceased to the dependants, based on what would have been their potential earning capacity and life expectancy.

On appeal, the Punjab & Haryana High Court reduced the compensation to Rs. 9,22,336 noting that the deceased was 47 years old according to his Aadhaar card when he died, meaning a multiplier of 13 under the MVA. The victim's family appealed to the Supreme Court, arguing that he was actually 45 at the time of the accident according to his School Leaving Certificate, and the multiplier should be 14 instead.

#### **Juvenile Justice Act, High Court rulings show Aadhaar is not proof of age**

The Supreme Court in a 13-page ruling pulled up the High Court for overreach, saying it should have limited its decision to determining if the tribunal order was "afflicted by perversity, illegality or any other such vice which may compromise it beyond redemption".



In its judgement, the SC referred to Section 94 of the Juvenile Justice (Care and Protection of Children) Act, 2015 which states that the “matriculation or equivalent certificate from the concerned examination Board” can be used as evidence to determine the age of a person brought before a Board or Committee under the Act. It supplemented this with High Court judgements mandating the use of the School Leaving Certificate to determine a person’s age instead of the Aadhaar card.

It also relied on the 2018 SC Constitutional Bench ruling where Justice Dr. A K Sikri described Aadhaar as “proof of identity”, as well as a UIDAI circular reiterating that Aadhaar is “not a proof of date of birth”.

The Supreme Court thus upheld a multiplier of 14 to calculate the compensation based on the age on the School Leaving Certificate and awarded the family Rs 15 lakh.

#### **How Aadhaar’s mandate has expanded over the years**

Aadhaar was mooted by the UPA government first as a “unique ID (UID) for below-poverty-line families” to access government schemes, and then as a national exercise to register and issue unique IDs to every resident in India. Amidst disagreements between the Finance Ministry, which then oversaw the UIDAI, and the Home Ministry, the exercise failed to take off. The National Identification Authority of India (NIAI) Bill was also rejected before it could be voted upon. In the run-up to the 2014 parliamentary election, the BJP opposed the Aadhaar exercise, questioning the security of the database and the extension of benefits to illegal immigrants.

The tides changed in 2016, following the BJP’s ascent to power with a brute majority: the NIAI Bill was withdrawn, and the party introduced the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Bill in July 2016 as a money bill. Article 110 of the Constitution of India authorises the passage of a money bill as law to be passed by the Lok Sabha overriding Rajya Sabha objections, provided the Bill meets certain conditions.

Following a legal challenge in the Supreme Court by former Karnataka High Court judge, Justice K S Puttaswamy, the SC in 2018 held that Aadhaar could not be made mandatory for opening a bank account, enrolling in educational institutions or getting a mobile SIM card. However, it upheld the mandatory linking between Aadhaar and PAN cards for filing income tax returns and allowed Aadhaar to be used to verify the identities of potential beneficiaries of government social welfare schemes.

Though the court held that Aadhaar registration must remain ‘voluntary’, the scope of the exercise has expanded significantly since it was first introduced. Aadhaar verification is now essential for accessing various government schemes and is also requested by private entities like Amazon Pay and Aditya Birla Housing Finance. In January 2024, Aadhaar became mandatory for rural workers seeking employment under the Mahatma Gandhi National Rural Employment Guarantee Scheme.

#### **SC RULING ON CHILD MARRIAGE: WHY IT’S IMPORTANT TO GO BEYOND JUST PUNISHMENT**

The judgment in *Society for Enlightenment and Voluntary Action v. Union of India*, delivered by the Supreme Court earlier this month, has moved the focus in cases of child marriage from penalising criminal actions to addressing the “harm meted out to the victim”.



The judgment underlines that comprehensive efforts to address child marriage should go beyond prevention and prosecution, and must include substantial measures to help those already in child marriages reclaim their agency.

According to National Family Health Survey data, the percentage of women aged 20-24 who were married before 18 declined from 47.4% in 2005 to 26.8% in 2016, and further to 23.3% in 2021. Nonetheless, the United Nations' Sustainable Development Goal (SDG) of eliminating child marriage entirely by 2030 appears ambitious.

The institutional response has focused mostly on prevention and, of late, prosecution — such as the mass arrests of men in Assam whose wives were minors when they married.

### **What is the law on child marriage?**

Under the Prohibition of Child Marriage Act, 2006 (PCMA), a “child marriage” is one in which either the husband is under 21 years of age, or the wife is under 18. Such a marriage is “voidable”, that is, the party that was a child at the time of the marriage has the option to annul it — until such annulment occurs, the marriage is valid and subsists.

In Karnataka and Haryana, as state-specific amendments have made all child marriages void from the beginning.

### **Is annulment the same as divorce?**

Annulment is different from divorce — when a marriage is annulled, it is as though it had never occurred, and the individuals involved are considered unmarried.

In contrast, divorce acknowledges that a marriage existed for a period before being dissolved, leaving the parties with the legal status of divorcees.

Divorce requires proving specific grounds — such as cruelty or adultery — depending on the personal law applicable. For annulment under the PCMA, the individual needs to only establish that a child marriage took place, and that they were within the legal age limit to apply for nullification.

PCMA also provides for other civil remedies such as maintenance, residence orders, and return of gifts exchanged at the wedding.

### **Why are there concerns about using criminal action to tackle child marriage?**

Although the child marriage itself subsists unless it is annulled, various activities related to child marriage are criminalised.

Under the PCMA, performing or promotion of child marriage, and a male adult marrying a minor are criminal offences. Sexual activity with a minor, including within a child marriage, is an offence under the Protection of Children from Sexual Offences Act, 2012 (POCSO), and the Bharatiya Nyaya Sanhita, 2023 (BNS).

Applied together, the criminal provisions of PCMA, BNS, and POCSO create the possibility of criminal action against the girl's entire family — her parents, husband, and in-laws — which could leave her in a vulnerable position without preparation or support to survive independently. It may also create barriers in accessing sexual and reproductive healthcare, as seeking such services could inadvertently trigger criminal action against her family.



A study of 73 judgments from 2008 to 2017 by the Delhi-based legal resource group Partners for Law in Development found that the criminal provisions of PCMA were used twice as often in cases of self-initiated marriages than arranged marriages.

A 2024 study by Bengaluru-based Enfold Proactive Health Trust and Civic Data Lab based on 174 PCMA judgments from Assam, Maharashtra, and Tamil Nadu, showed 49.4% of these marriages were self-initiated.

These trends suggest that criminal action can overlook complexities involved in the issue, and cause unintended harm to adolescents seeking autonomy.

In many cases, underage individuals choose to marry to escape difficult situations such as neglect, abuse, or the prospect of a forced marriage. These child marriages involve young people asserting their agency in a patriarchal society, using elopement as a way to legitimise their relationships.

#### **Why is the SC judgment significant?**

Exiting a child marriage can attract social and economic sanctions. The SC judgment directs the introduction of a special scheme for skill development, vocational training, and economic stability for women who leave child marriages, rehabilitation services, monitoring and follow-up support to ensure reintegration, and a call to consider compensation for these women under victim compensation schemes.

Some women may not want to exit the marriage, but may need help to claim agency within the marriage. They require tools to strengthen their ability to advocate for themselves in decisions involving reproductive rights, employment, and education. The SC judgment's emphasis on sex education for adolescents can empower those in such marriages with the skills and information to effectively navigate their relationships.

When implemented with an understanding of the evolving nature of child marriage — especially trends involving young people eloping — these measures offer a more holistic and agency-affirming approach to eliminating child marriage than an over-reliance on criminal prosecution.

#### **Do You Know:**

- Child marriage is an offence punishable with rigorous imprisonment — which may extend up to two years — or with a fine of up to Rs 1 lakh, or both, on whoever performs, conducts, directs or abets child marriage. Offences under the Act are cognisable and non-bailable. The marriage is voidable except in certain cases. The PCMA of 2006 replaced the Child Marriage Restraint Act of 1929. Before this, we had the Age of Consent Act, of 1891.

- India has one in three of the world's child brides. Of the country's 223 million child brides, 102 million were married before turning 15. In 2006, child marriages in India made up 47 per cent of all marriages — almost half of all girls in India were married before the age of 18, as per the National Family Health Survey. The prevalence has halved since the enactment of the PCMA. In some states, however, it still exceeds 40 per cent, with the highest rates found in West Bengal, Bihar and Tripura (UNICEF report). The problem is worse in rural India as compared to urban areas, with 56 and 29 per cent prevalence respectively.

- Poverty is the dominant cause of child marriages. Families see it as a way to cope with growing economic hardship. Often, younger siblings are married along with the elder ones to save



expenses. Displacement breaks down social networks and protection systems, making young girls even more vulnerable.

## BEYOND INTOXICATION

In holding that the term ‘intoxicating liquors’ in the State List includes alcohol used for industrial purposes, the Supreme Court of India has given a boost to the federal principle behind the distribution of powers between the Centre and the States. A nine-judge Bench has clarified the scope of Entry 8 in the State List under the Seventh Schedule in the Constitution to cover both ‘potable alcohol’ and alcohol that can be used to the detriment of public health. It takes in its fold the entire gamut of activities involving the production, sale and distribution of alcohol products, covering rectified spirit, extra neutral alcohol and denatured alcohol. In other words, the entry is not limited to the popular understanding of intoxicating liquor as alcoholic beverages consumed by people. The bone of contention was whether a central law, the Industries (Development and Regulation) Act (IDRA), 1951, which listed ‘fermentation industries’ as a scheduled subject on which the Union government could exercise control, had the effect of removing ‘industrial alcohol’ from the regulatory purview of State governments. The majority ruling of eight judges has the effect of excluding the industry of ‘intoxicating liquor’, as interpreted in the judgment, from the purview of the IDRA. Parliament, according to the verdict, lacks legislative competence to take control of the entire industry of intoxicating liquor. In his opinion on behalf of the majority, the Chief Justice of India, D.Y. Chandrachud, has noted that any other interpretation would upset the federal balance in the distribution of legislative powers and tilt it towards the Union.

This is the second major verdict by the Supreme Court in recent months that has upheld federal principles. In July, a nine-judge Bench ruled that States can tax mineral rights and mineral-bearing lands, a decision that preserved their legislative domain from interference by Parliament. As in that case involving mineral rights, Justice B.V. Nagarathna has authored a dissenting verdict in the ‘intoxicating liquor’ case too. The Constitution Assembly, she says, was clear that the term only meant potable alcohol and there was no intention on its part to include non-potable or industrial alcohol. In her view, Parliament occupied the field of ‘fermentation industries’, but excluded alcohol for human consumption. To that extent, the States are denuded of their power to regulate industrial alcohol. Justice Nagarathna’s dissent underscores the importance of industrial alcohol to the country’s economy, both as a key feedstock in the chemicals industry and liquid fuel to be blended with petrol. In the light of this understanding, the Centre has made ‘fermentation industries’, excluding potable alcohol, a scheduled industry under the IDRA. Her observation that the constitutional edifice should not be dislodged while trying to dynamically interpret the Constitution strikes a cautionary note.

## SICKNESS, INFIRMITY ARE GROUNDS FOR BAIL IN PMLA CASE, SAYS SC

The Supreme Court has highlighted that sickness and infirmity of an accused are grounds for bail even under the Prevention of Money Laundering Act, 2002 (PMLA).

A three-judge Bench headed by Chief Justice of India D.Y. Chandrachud, in a recent order, highlighted the leeway given to an ailing accused under the anti-money laundering law while allowing interim bail to Amar Sadhuram Mulchandani, former chairperson of Seva Vikas Co-operative Bank.

The proviso to Section 45(1) of the PMLA specifically contemplates that a person who “is sick or infirm” may be released on bail if the Special Court so directs.

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Section 45 of the PMLA covers bail. Clause (1) of the section is stringent — the accused would get bail only if the court was satisfied there were reasonable grounds for believing they were not guilty. Further, the court should be satisfied that the accused would not commit any offence while out on bail. These twin conditions make getting bail in the PMLA cases an almost impossible task.

However, the proviso to Clause (1) allows courts the discretion to exempt persons below 16 years, women, and the sick or the infirm from these dual conditions for bail, providing humane relief.

In the current case, the court noted that Mr. Mulchandani was 67 years old and had already spent nearly a year and three months in custody.

“At present, there is worsening of cardiac function as compared to previous reports,” the court order recorded medical reports on him.

“It is evident that the petitioner fulfils the threshold required for being enlarged on bail,” the top court concluded.

#### SPOUSAL PRIVACY IS FUNDAMENTAL RIGHT, EVIDENCE OBTAINED BY VIOLATING IT IS INADMISSIBLE, SAYS HC

“Privacy as a fundamental right includes spousal privacy as well, and evidence obtained by invading this right is inadmissible,” the Madurai Bench of the Madras High Court has held.

The court was hearing a civil revision petition filed by a woman. Her marriage to her husband was solemnised in 2003, and the couple have two children born through wedlock.

Alleging cruelty, adultery, and desertion by the woman, the man had filed a petition for dissolution of marriage before a sub-court in Paramakudi in Ramanathapuram district. He had furnished the call detail records of his wife. She had filed an application seeking rejection of the document. It was dismissed as premature. Challenging the same, the civil revision petition was filed.

Justice G.R. Swaminathan said trust forms the bedrock of matrimonial relations. Spouses must have implicit and total faith and confidence in each other. Snooping on the other destroys the fabric of marital life. One cannot pry on the other, he said.

“Obtaining information pertaining to the privacy of the wife without her knowledge and consent cannot be viewed benignly. Only if it is authoritatively laid down that evidence procured in breach of the privacy rights is not admissible, spouses will not resort to surveillance of the other,” the court said.

“One may wonder if marital misconduct, which has to be made out for obtaining relief, may become impossible to prove. It is not so. It can very well be established and proved by appropriate means and, in exceptional cases, the court can even take it upon itself to unearth the truth. Law cannot proceed on the premise that marital misconduct is the norm. It cannot permit or encourage snooping by one spouse on the other,” the court observed.

#### ‘Breach of privacy’

The court said the husband had stealthily obtained the information pertaining to the call history of his wife. He was not the owner of the device or the registered user of the SIM card. He had clandestine custody of it, probably for a short while. There had been a clear breach of the privacy of his wife, the court said.



It said in light of Sections 63 and 39 of the Bharatiya Sakshya Adhiniyam, 2023, and Section 79 A of the Information Technology Act, 2000, a person desirous of relying on any electronic record as evidence must submit a certificate at the time of filing of the electronic record.

## THE BURGEONING EXPENDITURE OF ELECTIONS

### The story so far:

The total expenditure for U.S. presidential and Congressional elections in November 2024 is estimated at around U.S. \$16 billion (equivalent to ₹1,36,000 crores). According to the Centre for Media Studies (CMS), the total expenditure by various political parties for the general election to Lok Sabha this year was around ₹1,00,000 crores.

### What are the limits in India?

The election expenditure limit for candidates is ₹95 lakh per Lok Sabha constituency in larger States and ₹75 lakh in smaller States. With respect to Legislative Assemblies, they are ₹40 lakh and ₹28 lakh for larger and smaller States respectively. These limits are set, from time to time, by the Election Commission (EC). There are no limits on the expenditure of political parties during elections.

### What are international standards?

In the U.S., the financing for elections happens primarily by contributions from individuals, corporations, and political action committees (PAC). While there are limits on individual and PAC contributions to candidates, various judgments of the U.S. Supreme Court have resulted in the creation of Super PACs on which there are no limits for spending. Out of the estimated expenditure in the November 2024 election cycle, around \$5.5 billion is estimated to be spent on the presidential election. The balance is around \$10.5 billion on elections to the House of Representatives and Senate of the U.S. Congress. This humungous raise is due to large donations by organisational donors and Super PACs.

In the U.K., a political party is allowed to spend £54,010 for each constituency they contest. This translates to a limit of £35 million for parties contesting all constituencies. There are also limits placed on candidates' spending during the campaign period. It translates, per constituency, to an average of £46-49,000 during the long campaign period (beginning five months before the full term of the House of Commons ends) and £17-20,000 during the short campaign period after elections are announced.

### what are the challenges?

Elections across the world democracies have become very expensive. Such increased expenditure that is met primarily through large donations creates an unholy nexus between the elected representatives and donors who seek favours. This acts as an entry barrier into electoral politics for many well-meaning citizens.

In India, candidates from all major political parties breach the election expenditure limits by a wide margin. Further, there are no limits on political party spending during elections. The official expenditures declared by the BJP and Congress for the 2019 election were ₹1,264 crores and ₹820 crores, respectively. However, according to a report by the CMS, ₹50,000 crore was spent by various parties during the 2019 election.



The report suggests that 35% of this money was spent on campaigns and publicity, while 25% was illegally distributed among voters. The CMS has estimated that spending during the 2024 election by various political parties was close to ₹1,00,000 crores. Such inflated election expenditure fuels corruption, resulting in a vicious cycle.

#### **What can be possible reforms?**

The Indrajit Gupta Committee (1998) and the Law Commission report (1999) have advocated for State funding of elections. This would mean the government partially bears the election expenditures of candidates nominated by recognised political parties. However, the feasibility and mechanism for implementing this measure are doubtful in the present context.

Simultaneous elections are touted as a panacea for addressing the issue of rising election expenditures. There are challenges on account of principles of federalism and constitutional amendments to this idea that need to be debated. It must also be noted that this mechanism may rein in campaign and publicity expenditure to some extent. However, without curbing the illegal distribution of cash to voters, any form of simultaneous election will not have a significant impact on election expenditure.

In this regard, certain practical steps to create a level playing field regarding election expenditure can be implemented if there is political will. These are based on the EC's 2016 report on 'Proposed Electoral Reforms.'. Firstly, the law must be amended to explicitly provide that 'financial assistance' by a political party to its candidate should also be within the candidate's prescribed election expenditure limits. Secondly, there should be a ceiling on political party expenditures. This may be kept at not more than the expenditure ceiling limit provided for a candidate multiplied by the number of candidates of the party contesting the election. Finally, additional judges may be appointed in High Courts for the speedy disposal of election-related cases, which would act as a deterrent against violating these norms. These reforms would require bipartisan political support and need to be expeditiously implemented.

### **WHY SOME HARYANA EVMS SHOWED 99% CHARGE AFTER ASSEMBLY POLLS COUNTING**

The Election Commission of India (EC) on Tuesday rejected the Congress' allegations of irregularities in the counting of votes in the recent Haryana Assembly polls.

#### **What had the Congress alleged?**

As votes were being counted in Haryana on October 8 — and BJP headed to a somewhat unexpected victory — Congress expressed concerns regarding the counting process, particularly the battery life of Electronic Voting Machines (EVMs) in 20 constituencies.

Jairam Ramesh, Congress general secretary in-charge of communications, said that some Congress candidates had flagged that the party was winning on EVMs with 60-70% battery charge, but losing on EVMs showing 99% battery charge. Later that day, in a press conference, Ramesh said that the party could not accept the poll results.

A delegation of Congress leaders met the EC on October 9 to convey its concerns, and submitted an updated memorandum on October 11. The complaints contained allegations of EVM tampering, and in one case, replacement of the control units. Congress' primary question: how could the EVM battery still be at 99% after polling and counting?



### How did the EC respond?

After seeking reports from each Returning Officer (RO) and the Haryana Chief Electoral Officer, the EC responded to Congress' allegations on Tuesday in a letter to party president Mallikarjun Kharge. In this letter, the EC categorically denied Congress' "baseless" allegations, which it said had the potential to cause "turbulence".

The EC said that the ROs of all 26 constituencies in which Congress candidates had filed complaints did not find evidence of any wrongdoing. It said that these ROs had also recorded the presence of the Congress candidates or their representatives during important processes pertaining to EVMs — from their commissioning six to eight days before polling and the installment of new batteries in EVMs' control units, to the sealing of the EVMs after polling and counting.

The EC also updated the Frequently Asked Questions (FAQs) section on its website to address some questions raised by Congress. This, for the very first time, has brought to the public domain details regarding the batteries used in EVMs, the reason for this choice, and what the battery percentage on EVMs' display units means.

**Choice of alkaline cells:** The control unit of the EVM and the Voter Verifiable Paper Audit Trail (VVPAT) both use non-rechargeable alkaline cells as their power source. These primary cells are different from the secondary or rechargeable cells used in devices like mobile phones, that need repeated charging. The EVM control unit has a power pack of five single-use alkaline cells which have a shelf-life of five years, while the VVPAT has 30 such cells. The system is designed to use power packs of 5.5 volts (V) to 8.2V.

**Reason for choice:** Since the EVM is a stand-alone unit meant to function without external power source, it was decided to not to use rechargeable cells. Moreover, alkaline batteries can operate in extreme temperatures and are reliable, giving a gradual decrease in voltage output. The EC said that these types of cells are frequently used in portable electronics, emergency power back-ups for medical devices, military radios, and GPS systems.

**Why EVM showed 99% charge after polling:** The EC clarified that the 99% shown on the display of the control unit does not mean that the battery charge is actually at 99%. When the battery voltage drops between 8.2V and 7.4V, the display shows "99%". It is only once it drops below 7.4V that the actual battery life is displayed. At a voltage below 5.8V, the display flashes a "change battery" sign, and below 5.5V, the EVM stops working (although stored data remains intact).

The power pack of the control unit "is sufficient to meet the requirements of power consumption of the EVM during poll day and counting day," the EC said.

"The voltage falls very gradually when the capacity is high but falls rapidly when the battery capacity reduces below a threshold. In case of lighter current load like with a single ballot unit and less than 1,000 votes being cast, the battery current drain is low and output voltage may not drop below 7.4V," the EC said, explaining why some EVMs may have displayed 99% battery life even after counting. The EVM power pack can support up to four ballot units and one control unit, in which upto 2,000 votes can be cast in total, the EC FAQ says.

The EC said that the EVM does not consume any power during the long storage period unlike mobile phones, which remain connected to mobile towers irrespective of whether they are in use, and thus see a continuous drain of the battery.



Any battery change in an EVM is done only in the presence of a candidate's polling agents, and is recorded in a prescribed form, the EC said.

## MODEL CODE OF CONDUCT

- The Election Commission's Model Code of Conduct is a set of guidelines issued to regulate political parties and candidates prior to elections. The rules range from issues related to speeches, polling day, polling booths, portfolios, content of election manifestos, processions and general conduct, so that free and fair elections are conducted.
- According to the Press Information Bureau, a version of the MCC was first introduced in the state assembly elections in Kerala in 1960. It was largely followed by all parties in the 1962 elections and continued to be followed in subsequent general elections.
- In October 1979, the EC added a section to regulate the 'party in power' and prevent it from gaining an unfair advantage at the time of elections.
- The MCC comes into force from the date the election schedule is announced until the date that results are out. The MCC contains eight provisions dealing with general conduct, meetings, processions, polling day, polling booths, observers, the party in power, and election manifestos.
- As soon as the code kicks in, the party in power — whether at the Centre or in the States — should ensure that it does not use its official position for campaigning. Hence, no policy, project or scheme can be announced that can influence the voting behaviour. The party must also avoid advertising at the cost of the public exchequer or using official mass media for publicity on achievements to improve chances of victory in the elections.
- The code also states that the ministers must not combine official visits with election work or use official machinery for the same.
- The issue of advertisement at the cost of public exchequer in the newspapers and other media is also considered an offence. The ruling government cannot make any ad-hoc appointments in Government, Public Undertakings etc. which may influence the voters.
- Political parties or candidates can be criticised based only on their work record and no caste and communal sentiments can be used to lure voters. Mosques, Churches, Temples or any other places of worship should not be used for election propaganda.

## WHY THIS CENSUS IS CRUCIAL FOR DELIMITATION, WOMEN'S QUOTA, WHAT'S THE LEGAL ROADMAP

The Centre has indicated that the much delayed Census could now start as early as next year — and be completed by 2026. There are two very important upshots of the exercise — the delimitation of constituencies, and the implementation of the reservation for women in elected bodies.

- Since senior government sources have said that the Census process is expected to be completed by 2026, it would imply that the government is hoping to wrap up the process in time for the 2029 Lok Sabha election. The timeline is significant since it also involves the delimitation exercise. Delimitation is the process of fixing or redrawing the boundaries of territorial constituencies. A Delimitation Commission is appointed for carrying out the exercise.



- Though the decadal Census has been conducted seven times since Independence (1951 to 2011), the delimitation exercise has been carried out only four times (in 1952, 1953, 1973, and 2002).
- The last delimitation, however, only readjusted the boundaries of constituencies based on population, and did not lead to an increase in the number of seats, which have remained constant since 1976.
- The number of seats in Lok Sabha is currently 543, and in all state Assemblies taken together, 4,123. These numbers were decided on the basis of the 1971 Census for Lok Sabha and 2001 Census for state constituencies, when the country's population was 54.81 crore and 102.87 crore respectively. The numbers of seats are likely to increase substantially, going by the expected population of around 1.5 billion when the 2021 Census is eventually conducted.

#### **Do You Know:**

- The 42nd Constitution Amendment brought in 1976 amended Article 170, and froze the delimitation exercise until the results of the first Census after 2000 were published. In 2001, this was further extended for 25 years. And now, delimitation will happen only after the results of the first Census after 2026 are published.
- Article 170 deals with the composition of legislative Assemblies, and contains an explanation to the provision defining the word "population" which is the basis for dividing territorial constituencies.
- In September 2023, Parliament amended The Constitution (One Hundred and Twenty-eighth Amendment) to provide 33 per cent reservation to women in Lok Sabha and state legislative Assemblies. A crucial provision in the law makes the implementation of women's reservation contingent upon the delimitation process.
- One of the reasons women's reservation did not become a reality in the last 35 years was the fear among male politicians of having to let go of their seats. A 33 per cent reservation in the current 545-member Lok Sabha would mean 182 seats being kept for women. Only 363 seats would be available for men. The current Lok Sabha has 467 men. But delimitation could preserve the political fortunes of the current group of male politicians.

#### **EXPRESS VIEW ON ACTOR VIJAY'S TVK: A NEW PARTY IS BORN**

At the first conference of his newly-formed party on Sunday, Tamilaga Vettri Kazhagam (TVK), actor-turned-politician Vijay sought to carve out a space that claims continuity with the Dravidian movement while recognising that the central pole of national politics is now the BJP. In his speech, Vijay invoked Periyar, B R Ambedkar and K Kamaraj, supported the caste census and spoke of expanding the welfare net for women, children and the elderly. In what appeared to be an allusion to the BJP, Vijay spoke against "divisive forces". At the same time, in a departure from the DMK's atheist rationalism, he said that "we won't be taking only one thing that Periyar said — the anti-God position. We have no stake in a politics that denies God". Vijay also attacked "corrupt family politics" and spoke of the need to evolve newer forms of political communication.

Whether the TVK can cash in on Vijay's popularity politically — his fan clubs are certainly a launching pad in rural and peri-urban areas — will be known only after the 2026 assembly polls. Actors in Tamil Nadu politics have had a mixed record — from the massive popularity of MGR to the poor performance of Kamal Haasan's Makkal Needhi Maiam. Now, Vijay's articulation of TVK's



agenda raises both ideological and structural questions about the state's politics. The AIADMK has been in decline since J Jayalalithaa's death and the DMK has become, like so many other regional parties, a family firm with M K Stalin succeeding M Karunanidhi and anointing his son Udhayanidhi as his deputy. While the "Dravidian model" of governance has seen successes, its politics has arguably stagnated in terms of leadership and ideology.

Tamil Nadu is not the only state where new entrants are attempting to make a mark. The AAP began its journey as an anti-corruption — even anti-politician — movement, helmed by "self-made" professionals, keen on establishing a civic solutionism-based governance model. In Bihar, Prashant Kishor has launched the Jan Suraj party. There, as in Tamil Nadu, a generation of socialist leaders — Lalu Prasad the most prominent among them — who emerged in the prelude to and during the Emergency, is waning; their party leadership is also in the grip of dynasty. Kishor, too, has made a welfarist, social justice-based pitch and appealed to the aspirational youth. These new entrants into politics have a challenging road ahead: First, because the barrier to entry in a field with established players is high in a large and complex polity. Second, new political parties often slip into the same patterns as those they seek to replace. Third, their "new" ideas are often coopted and domesticated by established players in the polity.

**Note:**

— Tamil actor Vijay while delivering a political speech for his new party Tamilaga Vettri Kazhagam ("Tamil Nadu Victory Federation" or TVK) identified Rani Velu Nachiyar and Anjalai Ammal as its ideological mentors.

— Velu Nachiyar is regarded as Tamil Nadu's 'Veeramangai' or brave lady, and among the first Indian queens to fight against British colonial power in India.

— Anjalai Ammal was the first woman to be elected to the Madras legislature, representing the Congress party, and remained politically active until she died in 1961.

— When Ammal was barred by the British government from meeting Mahatma Gandhi on his 1934 visit to Cuddalore. She wore a burqa and travelled in a horse-drawn carriage to meet him. It is believed that Gandhi has called her "South India's Rani of Jhansi".

**IN WEST BENGAL'S JANGALMAHAL REGION, CONFLICT AND COEXISTENCE IS A DECADES-LONG SAGA**

In the early hours of August 15, when Kolkata and the rest of West Bengal was seething in anger over the rape and murder of a doctor at R.G. Kar Medical College and Hospital, another conflict was raging in front of the Jhargram Raj College. Five elephants had entered Jhargram, which is surrounded by forests, in southern Bengal.

**A brutal clash**

About 30 villagers, a special monitoring team engaged by the forest department and locally referred to as a 'hula (torch) party', tried to drive the animals away using sticks and flaming torches. The forest department was able to tranquillize one of the five pachyderms, but one got trapped opposite the college campus. Two men of the hula party allegedly threw their torches at the elephant, setting it on fire. The elephant ran frantically, writhing and shrieking in pain as flames engulfed its body.



The elephant collapsed and died. The postmortem of the deceased elephant on August 17 revealed that she was pregnant.

An elderly man was also killed by the elephants during this turmoil.

These deaths brought back to the fore the three-decade-old human-elephant conflict in the south-western parts of West Bengal, often referred to as the Jangalmahal region. Here, West Bengal Forest Department officials say there are 200 elephants across 59,497-hectare of forested area.

In 2023 another pregnant female elephant had died in conflict. There have been 99 human deaths from elephant attacks in the State in 2024 alone. South Bengal accounts for half of these deaths.

Wildlife activists were livid at the brutality of the killing, and protested locally against the crude practices of hula parties. Hula is a handmade torch with an iron rod and live fire. Hula parties are hired informally by the forest department.

#### **Forest dept. faces flak**

After the videos of the attack on the elephant went viral, two members of the hula party were arrested on August 20. A public interest litigation has been filed before the Calcutta High Court, with the petition claiming that “not a single official and properly trained personnel was there who actually knew how to deal with such a situation”. This has been refuted by forest officials.

Umar Imam, the Divisional Forest Officer (DFO) of Jhargram, describes elephants as “sharp, intelligent, and adaptive animals” that have “changing behaviour patterns”. However, he adds, “Once elephants start liking a place, it is hard to remove them from the area.”

The forest department and DFO are facing the heat of the protests and criticism. “The only reasonable way to combat the conflict is to reduce human-elephant interaction and make co-existence possible. We are trying to increase plantation, so the elephants have enough food inside the forests and do not venture out into the villages,” says Imam. He wants to try energised fencing in places, that will send out shocks when touched, to restrict herd movement. He admits that many officials do not agree with him and call it inhumane.

Sagnik Sengupta, the director of Sage Foundation that works on wildlife conservation and mitigating human-animal conflict, says that using electric fencing to restrict any Schedule I animal (the elephant is a part of this list) is illegal in India according to the Wildlife Protection Act, 1972. People that cause harm to animals under Schedule I may face imprisonment.

The activist says, “The hula parties work under the DFO and he cannot shrug off responsibility of the actions taken by his team under his watch.” The DFO, however, claims that the flaming torches were hurled without his knowledge and did not happen in front of his eyes.

Shyamsundar Mahato, 54, is a local activist who says that before the 1980s elephants were a rare site in the area. Even when they came from the Dalma mountain range in Jharkhand, they went back and never stayed. He claims that the mining in the Dalma mountains has caused these elephants to leave their natural habitat and come to Jhargram.

### EXPRESS VIEW ON UPTICK IN BTECH SEATS: ENGINEERING THE FUTURE

The data for B'Tech seats across the country is a reason for hope. The All India Council for Technical Education's (AICTE) approved intake for undergraduate engineering and technology

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courses for 2024-25 shows a nearly 19 per cent increase from 2021-22, when the total number of seats touched the lowest in a decade. The uptick comes after a year-on-year decline in intake for most of the past decade. This was also a period when reduced demand forced several colleges to shut down. The slump, as underlined by an investigation in this newspaper in December 2017, had much to do with the deficiencies of the institutions and the AICTE's failings as a regulator and enabler. The analysis had revealed that most colleges were dogged by corruption and did not have facilities — proper laboratories, trained teachers — to nurture talent. The AICTE has clarified that the increase in the number of seats is contingent on the institutions fulfilling infrastructure and faculty-related requirements. It should guard against lapsing into the old ways.

The engineering profession in India is riddled with paradoxes. The country produces one of the highest numbers of engineers in the world. Yet, report after report has pointed out that most Indian institutions do not provide state-of-the-art skills. Even the most conservative surveys estimate that about 30 per cent engineering graduates do not have a job — in fact, last year, then NITI Aayog Vice Chairman Rajiv Kumar said that this figure is as high as 48 per cent. Most institutes do not provide practical training that should be fundamental to an applied science such as engineering. That's why they have failed to provide a springboard for the Centre's entrepreneurial projects such as Make in India. A part of the problem also stems from low investment in research and development (R&D). India's R&D expenditure to GDP ratio of 0.7 per cent is very low compared to developed economies — South Korea, for instance, spends more than 5 per cent of its GDP on R&D.

The National Education Policy 2020 (NEP) talks about filling such gaps, and forging links between industry and academia to mobilise funds. The AICTE's latest mandate to institutes to start courses in new technologies — AI, robotics, data sciences and cyber security — is in line with the policy's vision of turning engineering colleges into nurseries for industry. The challenge will be in helping them recruit quality faculty. A beginning can be made by tapping into the expertise of top institutes such as IITs to train teachers of smaller colleges. In the long run, the AICTE should find ways to give effect to the NEP's recommendation of setting up training institutes to update teachers' knowledge.

#### PANEL AFTER LEAK: SEND TEST PAPER DIGITALLY, ANSWERS ON OMR SHEET

- The seven-member committee, headed by former ISRO head Dr K Radhakrishnan was tasked with suggesting reforms to strengthen data security protocols, improve the examination process, and review the structure and operations of the NTA. It submitted its report to the Education Ministry recently.
- The committee has not limited its recommendations to reforms for NEET but has proposed long-term measures to secure all entrance tests conducted by the Centre.
- The panel has advocated for greater government control over exam administration. This would include increasing the number of its own examination centres instead of outsourcing the conduct of exams to service providers and employing more permanent staff for the NTA which relies heavily on contractual personnel.
- Currently, examinations conducted by the NTA are typically held in government-run schools and colleges. When these venues are insufficient, the agency enlists AICTE-recognised institutes and colleges.



- The panel has advocated for conducting entrance tests online as much as possible, it has suggested a hybrid mode for cases where this is not feasible.
- In the hybrid mode, the question paper will be transmitted digitally to the exam centre but candidates will mark their answers on an OMR sheet.

**Do You Know:**

- The Radhakrishnan panel is said to have argued against the logic behind so many tests. “Why should a science student, who has already appeared for Board exams, have to sit for another test in the same subjects? The role of subjects should primarily be to determine eligibility, while CUET should assess general aptitude and some subject knowledge to prepare a merit list for college admissions. Why should students take up to six papers if they have already completed their board exams?” said a source.
- The Radhakrishnan panel is also reported to have recommended that NEET-UG be conducted in multiple stages, preferably two, similar to the Joint Entrance Exam, which includes JEE Main and JEE Advanced, due to the large number of aspirants. Nearly 20 lakh medical aspirants have registered for NEET-UG this year. Additionally, the panel suggested capping the number of attempts for NEET-UG, as currently, candidates can take the exam as many times as they wish.
- With Radhakrishnan, the expert committee includes former AIIMS Director Randeep Guleria; Hyderabad Central University Vice-Chancellor B J Rao; Professor Emeritus in the Department of Civil Engineering at IIT Madras, Ramamurthy K; Karmayogi Bharat Board Member, Pankaj Bansal; IIT Delhi Professor Aditya Mittal; and Joint Secretary in the Education Ministry Govind Jaiswal.

#### A NUDGE TOWARDS CLEAN AIR

the Supreme Court came down heavily on the Centre and the governments of Delhi and its neighbouring states for their failure to take strict action against farmers who set crop stubble on fire. The Court cited Article 21 of the Constitution and underlined that people have a right to live in a pollution-free environment.

- Besides crop-stubble burning, the main sources of pollution in the Delhi-NCR are local traffic, industries, construction works, sweeping of roads and local biomass burning.
- According to government data, stubble burning contributes 5 to 30 per cent to NCR’s pollution load during this period. Most such incidents take place in Punjab and Haryana.
- Besides crop-stubble burning, the main sources of pollution in the Delhi-NCR are local traffic, industries, construction works, sweeping of roads and local biomass burning. According to government data, stubble burning contributes 5 to 30 per cent to NCR’s pollution load during this period. Most such incidents take place in Punjab and Haryana.
- The genesis of the problem lies in the Sub-soil Water Conservation Acts passed in 2009 by the Punjab and Haryana governments. These laws prohibit paddy sowing before mid-June. Their purpose is to ensure sowing closer to monsoon and conserve groundwater in the process.
- Delayed sowing, however, results in delayed harvesting. The crop cycle is delayed by two to three weeks. After harvesting, farmers traditionally had a window of about four to six weeks to sow the next rabi crop, mainly wheat. This window has shrunk by half in the past 15 years.



- Stubble burning is ecologically harmful. It leads to the depletion of nitrogen, phosphorus, sulphur, potassium and other micronutrients that are essential to soil health.
- The most eco-friendly solution is to harvest paddy manually. After manual harvesting and threshing, the residue is used as fodder. A part is also set aside as bedding for animals in the winter.
- To encourage farmers to harvest paddy manually and manage the stubble subsequently, the governments should pay them what it costs to do so — about Rs 4,000 per acre. MGNREGA funds could be used to partly finance this shift.
- Penalising farmers and subsidising costly fossil fuel-guzzling machines shouldn't be the solution to NCR's pollution crisis.
- A return to manual harvesting will save water and curb pollution. In other words, the benefits of paying farmers to switch to manual harvesting extend beyond improving Delhi-NCR's air quality.

**Do You Know:**

- Graded Response Action Plan (GRAP) is a set of emergency measures that kick in to prevent further deterioration of air quality once it reaches a certain threshold. Stage 1 of GRAP is activated when the AQI is in the 'poor' category (201 to 300).
- The GRAP was first notified in January 2017 by the Ministry of Environment, Forest and Climate Change. This was based on a plan that was submitted by the Central Pollution Control Board (CPCB) in November 2016.
- According to the notification, the task of implementing the GRAP fell on the now-dissolved Environment Pollution (Prevention and Control) Authority for the NCR. From 2021 onwards, the GRAP is being implemented by the Commission for Air Quality Management (CAQM).

#### WARMER, WINDIER: WHY POST-DIWALI DELHI AIR WAS CLEANER THIS YEAR

The 24-hour average air quality on the day before Diwali and Diwali — Wednesday and Thursday respectively — in Delhi this year was worse than in the last two years. However, on Friday morning — the day after Diwali — the pollution level was the lowest since 2015, barring 2022.

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.

- Several factors played a role, but meteorological conditions had the biggest impact.
  - **WARMER TEMPERATURES:** Last year, Diwali was in November, when the temperature conditions were much cooler. This year, however, the festival was celebrated in late October, when temperatures were much warmer.
  - This is significant, as cooler temperatures mean increased pollution levels. As temperature dips, the inversion height — which is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere — is lowered. The concentration of air pollutants increases when this happens.



— **STRONG WINDS:** Another factor was high wind speeds, which led to a better dispersal of the pollution post-Diwali.

— Due to the stronger winds, levels of tiny pollutants such as PM2.5 and PM10, which had spiked on Thursday likely due to the bursting of crackers and stubble burning in Punjab and Haryana, dropped the next day.

## GREEN FIRECRACKERS

In 2023, the Supreme Court clarified that its order banning the use of barium and banned chemicals in firecrackers are applicable not just to the National Capital Region but to the entire country. The Delhi government has also ordered a complete ban on firecrackers until January 1, 2025.

1. “Green crackers” are so named because they “do not contain harmful chemicals” that would cause air pollution. Components in firecrackers are replaced with others that are “less dangerous” and “less harmful” to the atmosphere. The Council of Scientific and Industrial Research (CSIR) has developed ‘green firecrackers’ to address this issue and combat pollution.

2. Both green crackers and traditional crackers cause pollution. However, the only difference is that green crackers cause 30 per cent less air pollution as compared to traditional ones. Green crackers reduce emissions substantially and absorb dust and don’t contain hazardous elements like barium nitrate. Toxic metals in traditional crackers are replaced with less hazardous compounds.

3. According to the CSIR-National Environmental Engineering Research Institute, **green crackers** must have a reduction in the size of the shell, elimination of ash usage, reduced usage of raw materials in the composition, and/or use of additives as dust suppressants to reduce particulate matter, SO<sub>2</sub>, and NO<sub>2</sub> emissions.

4. These ‘green firecrackers’ have types like **SWAS (safe water releaser)**, **SAFAL (safe minimal aluminium)**, and **STAR (safe thermite cracker)**.

5. **SWAS** is a safe water releaser, which suppresses the dust released by releasing water vapour in the air. It does not comprise potassium nitrate and sulphur and the particulate dust released will reduce approximately by 30 per cent.

6. **SAFAL** is safe minimal aluminium which has minimum usage of aluminium, and used magnesium instead. It ensures a reduction in sound in comparison to traditional crackers.

7. **STAR** is a safe thermite cracker, which does not comprise potassium nitrate and sulphur, and emits reduced particulate matter disposal and reduced sound intensity.

### Impact of ban on firecrackers

1. According to a study, titled ‘Are Delhi residents exposed to lesser particle number concentration due to the firework ban in the city?’, published in the journal, Air Quality, Atmosphere & Health, by researchers from the Delhi Technological University (DTU), **a firecracker ban can reduce up to 20-22% of certain nanoparticle emissions.**

2. It analysed air quality before and after the banning of firecrackers during the Diwali celebrations of 2021 and 2022 in the national capital.



3. The inhalable nanoparticle concentration during the 2021 Diwali day was about 9.73 million nanoparticles. On the Diwali day in 2022, it was around 8.12 million nanoparticles. The total inhalable particle exposure on Diwali day decreased by approximately 1.6 million nanoparticles, around an 18% reduction from the previous year.

4. The nanoparticle pollutants, which are particularly hazardous for children and older adults, can penetrate through the skin and blood vessels due to their smaller size. The major health impacts of exposure to these are stroke, hypertension, and myocardial infarction, the study noted.

5. Also, a study conducted by the Centre for Science and Environment (CSE) found that the overall contribution of local sources, especially the transport sector, is responsible for the worsening air quality pre-Diwali in the national capital.

6. CSE found a strong correlation between vehicles, hourly changes in NOx levels, and city congestion when it analysed hourly travel time data from 25 Delhi roads between September 15 and October 29 using Google Maps API. The highest congestion was observed on the weekend before Diwali (October 27).

Conventional crackers	
Colour	Compounds
White colour	Aluminium, Magnesium, and Titanium
Yellow Colour	Sodium compounds
Blue Colour	Copper compounds
Red Colour	Strontium carbonates
Green Colour	Barium monochloride salts or Barium nitrate or Barium chlorate

**SAFE WORSHIP**

The explosion of firecrackers during a temple festival ritual in Kasaragod district of Kerala, which left over 150 people injured, could have been averted with greater caution and an adherence to safety regulations. That such an accident took place in a State where similar events have occurred at regular intervals in the last 40 years tells a story of unlearnt lessons. In February this year, a blast in a firecracker storage unit, during a temple fete in Kochi, claimed two lives and left 25 injured. Eight years ago, the Kerala High Court made the observation of an “unhealthy culture” glamourising every religious festival and ceremony with the use of fireworks and an elephant

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



parade. The only saving grace in the accident on October 29, at the Anjootambalam Veererkavu temple in Neeleswaram, was that there was no loss of life. Some arrests have been made, two inquiries ordered and a special team is probing the accident. The State Human Rights Commission has initiated an investigation and sought an official report in 15 days.

In the given instance, two of the arrested persons allegedly ignited the firecrackers, with one of them said to have ignored the warnings of onlookers. The crackers were close to a shed where explosives were stored. In 2016, in the worst pyrotechnics tragedy in the State, 100 people died during a festival at the Puttingal Devi temple in Kollam district. It resulted in the High Court and the Union government issuing a number of directives. Days after the Centre amended the rules of the Explosives Act, the Revenue Minister of Kerala, K. Rajan said these posed an “open challenge” to the conduct of the Thrissur Pooram. On October 23, a Kerala Cabinet meeting expressed the view that the amendments would make it impossible to have the display of fireworks, a permanent fixture in religious festivals in the State, and that this should be conveyed to the Central government. The amendments, that were notified on October 11, included having a 200-metre distance between the site of the fireworks and the place of storage, and people watching from 100 m afar. Six months ago, there were protests when the authorities permitted fireworks, as part of the Thrissur Pooram, but only during the day. Even in 2016, an all-party meeting that was held following the Puttingal Devi temple accident, did not favour a complete ban on fireworks. This was the stand of the High Court too, in March 2024, while quashing an official order against the use of fireworks in a few temple festivals. In such a complex situation, there is no option but to strictly enforce safety norms. Even so, there are some who still argue that “cultural practices” should be balanced against safety norms. But clearly, no activity that endangers the safety of devotees can be allowed in any place of public worship.

#### WHAT HAS BEEN DONE TO CURB VEHICLE POLLUTION? NGT NOTICE TO POLICE

The National Green Tribunal (NGT) has issued notices to the Delhi Police Commissioner and Traffic Commissioner to file a response detailing the actions taken to control vehicular pollution. It also observed that a transparent process should be followed to invoke different stages of the Graded Response Action Plan (GRAP).

- The green body, which was hearing a Suo motu plea based on a report last year by The Indian Express, also pulled up the Commission for Air Quality Management (CAQM) for “lapses” in preventing the dip in the air quality. It observed that despite the bench’s emphasis earlier on taking effective steps, there was no improvement in air quality.
- The bench directed CAQM to “disclose the steps taken by it this year until September to ensure that the air quality does not dip in the coming months of winter”.
- The directives were issued on October 24 during a hearing by the Principal Bench headed by NGT Chairperson Justice Prakash Shrivastava and comprising judicial member Justice Arun Kumar Tyagi and expert member Dr A Senthil Vel.
- In response to a CAQM submission on the GRAP schedule, the Tribunal stated: “It is not disclosed as to what duration is treated to be sufficiently long duration. We feel that objective criteria need to be applied, and a transparent process needs to be adopted for invoking the different stages of GRAP.”

**Do You Know:**

- The BS — Bharat Stage — emission standards are norms instituted by the government to regulate the output of air pollutants from internal combustion engine equipment, including motor vehicles. India has been following European (Euro) emission norms, although with a time lag of five years.
- India introduced emission norms first in 1991, and tightened them in 1996, when most vehicle manufacturers had to incorporate technology upgrades like catalytic converters to cut exhaust emissions.
- Fuel specifications based on environmental considerations were notified first in April 1996 — to be implemented by 2000, and incorporated in BIS 2000 standards. Following the landmark Supreme Court order of April 1999, the Centre notified Bharat Stage-I (BIS 2000) and Bharat Stage-II norms, broadly equivalent to Euro I and Euro II respectively. BS-II was for the National Capital Region and other metros; BS-I for the rest of India.
- From April 2005, in line with the Auto Fuel Policy of 2003, BS-III and BS-II fuel quality norms came into existence for 13 major cities, and for the rest of the country respectively. From April 2010, BS-IV and BS-III norms were put in place in 13 major cities and the rest of India respectively.
- As per the Policy roadmap, BS-V and BS-VI norms were to be implemented from April 1, 2022, and April 1, 2024, respectively. But in November 2015, the Road Transport Ministry issued a draft notification advancing the implementation of BS-V norms for new four-wheel vehicle models to April 1, 2019, and for existing models to April 1, 2020. The corresponding dates for BS-VI norms were brought forward to April 1, 2021, and April 1, 2022, respectively. Soon afterward, however, Road Transport Minister Nitin Gadkari announced that the government had decided to leapfrog to BS-VI from April 1, 2020, skipping BS-V all together.

**INDIAN PHARMA PLAYERS ASKED TO STEP UP AMID IV FLUIDS' SHORTAGE IN U.S.**

India's drug exporters body Pharmexcil has alerted members to a shortage of intravenous (IV) fluids that the United States is facing in the aftermath of a damage caused by Hurricane Helene to a manufacturing facility, and urged them to explore the opportunity to chip in with supplies.

The communication to members that was issued recently followed the Indian Embassy in Washington D.C. informing the exporters' body under the Commerce Ministry about a critical shortage of intravenous fluids prevailing in the U.S. due to the serious damage Hurricane Helene caused to a Baxter International plant.

The U.S. President has declared a national public health emergency due to the shortage of the critical fluids that are required for surgeries and other medical procedures. Several hospitals have postponed non-essential medical procedures, while the U.S. FDA has also authorised import of the fluids from other countries, it said.

Hurricane Helene that raged through parts of the country in late September was described as one of the deadliest storms to wreak havoc on the mainland U.S. since Hurricane Katrina in 2005. According to reports, at least 200 people died. As another support measure consequent to the shortage of the fluids, the U.S. FDA on October 28 announced extended use dates for some parenteral drug products, after a review of the stability data submitted by Baxter International, which is a leading manufacturer of the fluids.



Separately, in an update, the company said that its North Cove manufacturing site was significantly impacted by the rain and storm surge from Hurricane Helene, which was unprecedented in Western North Carolina and resulted in water flooding the facility.

“We are encouraged to report that, barring any unanticipated developments, Baxter anticipates restarting the highest-throughput IV solutions manufacturing line this week,” it said.

## PM ROLLS OUT HEALTH COVER FOR PERSONS AGED 70 AND ABOVE

Prime Minister Narendra Modi has launched health cards under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) to provide health coverage to people aged 70 years and above, regardless of their income and economic status

- The scheme will cover almost 6 crore individuals from 4.5 crore families. Of them, 1.78 crore are already covered by the scheme.
- Among the rest, around 80 lakh people are separately covered under various government health schemes — the Central Government Health Scheme (CGHS), Ex-Servicemen Contributory Health Scheme, or cover provided to family members of defence and railway personnel.
- Those covered under existing government health schemes will have the option of choosing either Ayushman Bharat or continuing with their existing coverage.
- People who are covered under the Employees State Insurance Corporation (ESIC), however, will be eligible to have both their existing cover and Ayushman Bharat. This is because premiums for ESIC are paid by the insured and their employer, not the government. People who have their own privately purchased insurance cover will be eligible to have the Ayushman Bharat cover as well.
- Members over the age of 70 years in families already covered in accordance with their economic status will get a top-up cover of Rs 5 lakh — to be used only for the elderly. These elderly beneficiaries will have to re-register to receive the top-up cover

### Do You Know:

- In a landmark decision, the Union Cabinet approved an expansion of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) on September 11, 2024, offering comprehensive health insurance to senior citizens aged 70 and above.
- The Ayushman Vaya Vandana card marks the beginning of the expanded scheme that is expected to change the face of public healthcare as India’s rapidly growing ageing citizens can now access treatment, which had been out of their reach because of high costs.
- Everyone of age 70 or more will be entitled to a cover of Rs 5 lakh annually, shared within the family. This means if there are two elderly beneficiaries in the household, the cover will be split among them.
- Making health cover universal over the age of 70 is very significant as India’s population ages. At the time of the 2011 census, only 8.6 per cent of India’s population was over the age of 60 years. This is expected to increase to 19.5 per cent by 2050, according to the government’s Longitudinal Ageing Study in India (LASI). In terms of numbers, Indians over the age of 60 are likely to be 319 million in 2050 — up more than three times from the 103 million in 2011.





## INDIA SAW DIP IN TB CASES & DEATHS IN 2023, BUT TARGET STILL FAR: WHO REPORT

India has ensured high treatment coverage among people diagnosed with tuberculosis and also achieved a significant increase in the number of people receiving preventative therapy, says Global TB Report recently released by the World Health Organization.

- Data from the Global TB Report shows that 12.2 lakh people were put on preventive therapy in 2023, up from 10.2 lakh in 2022, and 4.2 lakh in 2021.
- India has also ensured a treatment coverage of 85% and is among seven of the 30 high-burden countries with high treatment coverage.
- The preventative treatment is offered to those at high risk of getting the infection such as household contacts of TB patients and people living with HIV. They are given Isoniazid daily for 6-9 months, the most widely used TB preventive therapy regimen worldwide.
- According to the WHO report, India saw a slight decline in the estimated number of tuberculosis cases and deaths in 2023, but it is nowhere near its elimination target.
- There were an estimated 28 lakh TB cases in India in 2023, accounting for 26% of the global cases. And, there were estimated 3.15 lakh TB-related deaths, accounting for 29% of the deaths globally.
- The report also said the gap between the estimated number of cases and the number of people actually getting diagnosed has been closing. India reported 25.2 lakh cases in 2023, increasing from 24.2 lakh the previous year.

### Do You Know:

- In India, the government offers free medicines for TB treatment, which is essential as the medicines can be expensive and the therapy may continue for as long as two years. Patients with TB may not be able to work during the therapy period and thereby lose out on income.
- The data shows that treatment was successful in 89% of the people with drug-susceptible TB, 73% of those with infection resistant to one of the common medicines rifampicin or resistant to multiple drugs, and 69% of those with extremely drug-resistant TB.

## PATENT INJUSTICE

The Indian biopharmaceutical industry is one of the fastest growing globally and is valued at \$60 billion. Contributing to this is an increase in innovation — the country is now ranked 39th in the Global Innovation Index, up from 81 in 2015.

- Biopharmaceuticals are medicines made from living cells, such as yeast and bacteria, as against conventional drugs that are made from chemicals. They have revolutionised the treatment of chronic diseases like cancer, diabetes, cardiovascular disease, and serious inflammatory autoimmune diseases. Biopharmaceuticals include biologics and biosimilars. Biosimilars refer to a biologic that is very similar to the one that has been cleared by the authorities for prescription by doctors. That is why they are also called follow-on biologics. They have the same efficacy, are as safe as the reference biologic and are used to treat the same disorders as the first biologic drug.



- Under the Make in India Initiative, the Centre has launched the National Biopharma Mission (NBM) — an industry-academia collaborative mission managed by the Biotechnology Industry Research Assistance Council. This \$250 million mission, co-funded by the World Bank, aims to accelerate biopharmaceutical development. It supports nearly 150 organisations and 300 MSMEs, with 21 shared infrastructure facilities established for research and biomanufacturing.
- One of the biggest barriers faced by Indian biosimilar manufacturers is patent evergreening. Despite legal safeguards, evergreening remains a challenge in launching affordable biosimilars as seen in the ongoing controversy surrounding pertuzumab, used to treat certain types of breast cancer. In India, due to its heavy disease burden, population density and lack of access to affordable medical care for a majority of the citizens, patent evergreening is a challenge.

#### Do You Know:

- India is a pioneer in the global biosimilars market. It was the first country to approve a biosimilars product for Hepatitis B. Today, there are 98 approved biosimilars in India, with at least 50 in the market, the most in any country. Many India-made biosimilars have been approved in markets like the US.
- The Indian biosimilars market was valued at \$349 million in 2022 and is estimated to expand at a growth rate of 25.2 per cent per annum from 2022 to 2030 to reach \$2,108 million by 2030. Between now and 2030, biologic products worth some \$170 billion will lose patent protection. This will open a window of opportunity for Indian biopharma to launch more biosimilar products.
- India's patent legislation, particularly Section 3(d) of the Patents Act, 1970, aims to prevent "evergreening" by rejecting patents for small innovations that lack substantive improvement. Under this, Novartis' patent application for the cancer drug Glivec (imatinib), used to treat leukaemia, was rejected as it did not show significant technical advancement. The decision, upheld by both the Madras High Court in 2005 and the Supreme Court in 2013, set a strong precedent against evergreening practices. Section 3(e) of the Act restricts patenting mixtures of known compounds unless a synergistic effect is proven, and Section 3(i) prevents patents on treatment methods.

### NEW ROCKET, PLUS MOON AND VENUS MISSIONS, HERALD NEW BEGINNINGS

Preview: The Indian government recently signed off on numerous new projects, including work on a new rocket and new moon and Venus missions. The space programme is thus on the cusp of important new beginnings. India is also preparing to launch the NISAR and Proba-3 satellites, and has received some good news from Astrosat. The private sector is also working on satellite projects of its own.

#### A slew of approvals

The Union Cabinet on September 18 approved four missions under the 'Gaganyaan' human spaceflight programme and four missions to test technologies for India's first space station, the Bharatiya Antariksh Station 1, by 2028. The Indian Space Research Organisation (ISRO) also added one uncrewed Gaganyaan flight in addition to the planned two.

The Cabinet approved an additional funding of ₹11,170 crore for the four Station-related missions and the additional Gaganyaan flight.



The Cabinet also approved ISRO's development of the Next Generation Launch Vehicle (NGLV) for ₹8,240 crore. This includes the cost of the rocket's first three development flights. ISRO is expected to develop the vehicle in collaboration with industry, so that industry players can seamlessly take over for operational flights when the rocket is tested and ready.

A Polar Satellite Launch Vehicle (PSLV) built by Hindustan Aeronautics, Ltd. and Larsen & Toubro is expected to launch at the end of 2024 or early 2025. Likewise, New Space India, Ltd. is expected to select a private entity to commercialise the LVM-3 rocket.

The Cabinet has also approved a scientific mission to Venus and the next Chandrayaan mission to the Moon. The Venus Orbiter Mission is expected to be launched in a window available in March 2028 and will cost ₹1,236 crore. With the mission, scientists hope to study the planet's acidic surface and atmosphere to understand how different planets of the Solar System evolved.

#### **Chandrayaan-4 and LUPEX**

Chandrayaan-4 will be a sample-return mission. Its components will be launched on two separate LVM-3 launch vehicles; they will dock in earth orbit before going to the moon, and land on the surface near the location of Chandrayaan 3. There the mission will scoop up some samples of moon soil and rock and send them back to the earth onboard a bespoke canister. The mission is expected to be launched by 2027 and cost ₹2,104 crore.

The Space Commission also approved a joint moon mission with Japan called the Lunar Polar Exploration Mission (LUPEX). For LUPEX, ISRO is developing a different moon lander than the one it used for Chandrayaan-3, and which it hopes can be used in crewed lunar missions in future.

The Commission also signed off on the development of a third launch pad at Sriharikota, which ISRO will need to test and launch the NGLV.

#### **SBS and Axiom-4**

The Cabinet Committee on Security approved the third phase of the Space Based Surveillance (SBS) missions on October 11. For this, ISRO will build 21 satellites and private companies will build another 31, for ₹26,968 crore in all. This is a significant improvement over the four satellites ISRO built for SBS-1 in 2001 and six for SBS-2 in 2013.

India's astronaut-designate Sudhanshu Shukla had his space suit measured and also underwent pressurisation tests at the SpaceX headquarters. The event marks the official start of his 10-day training programme before he will fly to the International Space Station aboard the Axiom-4 mission next year.

#### **Satellites en route to India**

The NASA-ISRO Synthetic Aperture Radar (NISAR) is an earth-observation satellite whose radar antenna reflector recently landed in India from the Jet Propulsion Lab in California. Earlier, tests in India had revealed it may experience higher temperatures than expected during its launch. It had to be flown back to receive a protective coating. ISRO is expected to launch NISAR in early 2025 on board a Geosynchronous Satellite Launch Vehicle.

The other mission, Proba-3 from Europe, will study the Sun's corona. It will have two satellites flying in formation: one will gaze at the Sun while the other will block the first satellite's view of the Sun's central area, like creating an eclipse, leaving only light from the corona to hit the



cameras. The European Space Agency has said Proba 3 is expected to launch on board a PSLV-XL vehicle on November 29. India previously launched Proba-1 on the PSLV-C3 mission, in 2001.

#### **From the private sector**

Manastu Space signed an agreement with Dhruva Space to test its green propulsion technology to power the latter's Launching Expeditions for Aspiring Payloads (LEAP-3) mission. LEAP-3 will carry payloads from different companies in 2025. Manastu is developing a green propulsion system using a hydrogen-peroxide-based fuel. It first tested LEAP on the PSLV-C58 mission on January 1 this year.

Bellatrix Aerospace unveiled 'Project 200', a prototype for a satellite that can fly at an altitude of 200 km. a.k.a. the ultra-low earth orbit.

Ananth Technologies became the first private Indian company to assemble, integrate, and test two Space Docking Experiment (SpaDEx) satellites for ISRO at the company's facility in Bengaluru. The satellite was then sent to the U.R. Rao Satellite Center (URSC) in the same city.

#### **Space science**

Scientists have found that the crater where Chandrayaan-3 landed is older than the South Pole Aitken Basin, itself 4.2-4.3 billion years old.

This was based on data from the Optical High-Resolution Camera onboard the Chandrayaan-2 orbiter and navigational cameras on board Pragyaan, the Chandrayaan-3 rover.

Astrosat, India's first multi-wavelength space observatory, was built with a mission life of five years but has now operated for nine. Based on fuel readings, it is expected to last for another two years. The data collected by the observatory has been the basis of more than 400 published papers.

### **REMOVE HOAX BOMB THREATS, REPORT USERS BEHIND THEM: IT MIN TELLS SOCIAL MEDIA COS**

In the aftermath of a spate of hoax bomb threats made to Indian airliners over the last two weeks, primarily via anonymous social media accounts, the IT ministry has asked social media companies like Facebook, Instagram, and X to promptly block access to such content, reminding them that a failure to do so could lead to them losing legal immunity from hosting third-party content.

- In an advisory issued to social media companies on Friday, the ministry noted, "social media intermediaries must make reasonable efforts to disallow such malicious acts including hoax bomb threats from being disseminated on their platforms".
- It has also asked the companies to share information about such posts and users with the government within 72 hours, as laid down in the Information Technology (IT) Rules, 2021.
- Under the Bharatiya Nagarik Suraksha Sanhita, 2023, companies also have a responsibility to mandatorily report certain offences committed by users of their platforms that could threaten India's national security and economic interests.
- "...the IT Rules, 2021 obligates the intermediaries to provide information under its control or possession, or assistance to the government... for the purposes of verification of identity, or for



the prevention, detection, investigation, or prosecution, of offences under any law for the time being in force, or for cyber security incidents, well within the stipulated time frames (as soon as possible but not later than 72 hours),” the advisory said.

- Government agencies are also learnt to be in touch with social media platforms and virtual private network (VPN) service providers to trace and nab those behind these threats.

**Do You Know:**

- In April 2022, the Ministry of Electronics and Information Technology (MEiTY) promulgated the IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023 (2023 Rules), which amended the Information Technology Rules, 2021.

## SUN SIGNS

Policy decisions that are clairvoyant are most likely to serve well, and for long. A clairvoyance that comes from reading the signs today and now, can save lives, and make living better. Tamil Nadu’s move to declare heat as a State-specific disaster, rendering people so affected eligible for assistance from the State, is unequivocally a beacon shining in a country where environmental degradation goes together with unplanned cities, poverty, and limited access to shelter and health care. The World Meteorological Organization declared that 2023 was the hottest year on record. A study on ‘Deadly heat waves projected in the densely populated agricultural regions of South Asia’ portends that the most intense hazard from extreme future heatwaves will be concentrated around the densely populated agricultural regions of the Ganges and Indus basins. It is critical that the human body remains at the optimal temperature of 37° Celsius: living in temperatures that constantly and consistently exceed this limit can cause immeasurable stress and the breakdown of bodily functions, impact vital organs, and lead to death in vulnerable populations. Tamil Nadu’s move is a laudable recognition of the inevitability of extreme weather events affecting people’s health even as it prepares to address issues arising out of extreme heat events. The government order says many parts of Tamil Nadu have consistently recorded temperatures above 40° C during the summer of 2024, acknowledging that heatwaves are emerging as a threat affecting the day-to-day life of the elderly, children, those with prior illnesses, co-morbidities and those who work in open environments. Tamil Nadu’s vulnerability is exacerbated by its long coastline where humidity goes up during summer, giving rise to the peculiar wet-bulb temperature phenomenon. The World Economic Forum has warned that global warming is on track to reach a ‘wet-bulb temperature’ level of 35° C, where humans can no longer regulate safe body temperature through sweating.

While mechanisms must be alerted to mitigate the effects of global warming at the local, regional and national levels, it is also sagacious to prepare during the interim. The Tamil Nadu government’s move to provide relief to the victims of heatwave under the State Disaster Response Fund will feature a comprehensive range of activities, including ex gratia payment to families of those who died of heat-related conditions; provision for medical care, and drinking water, including supply of ORS packets, and rescheduling working hours, will make the State and its most vulnerable at least prepared for the worst. Other States would do well to be inspired by this model.



## WITH 23 NATIONAL TARGETS, INDIA SUBMITS BIODIVERSITY PROTECTION PLAN TO GLOBAL BODY

As part of its commitment under the Kunming-Montreal Global Biodiversity Framework (KM-GBF), India submitted its National Biodiversity Strategy and Action Plan (NBSAP) spelling out its 23 national biodiversity targets during the conclusion of the annual United Nations conference on biodiversity in Cali, Colombia.

- India's 23 targets are aligned with the three broad themes of the KM-GBF treaty – reducing threats to biodiversity, meeting people's needs through sustainable use and benefit-sharing, and tools and solutions for implementation and mainstreaming.
- The KM-GBF was adopted in 2022 at the 15th meeting under the Convention on Biological Diversity and 196 countries agreed to halt and reverse biodiversity loss by 2030 to achieve a nature-positive world.
- Under its goals to reduce threats to biodiversity, India's NBSAP has stated it will prioritise effective restoration of at least 30 per cent of degraded terrestrial, inland water, and marine and coastal ecosystems.
- India harbours nearly 8 per cent of the world's known plant and animal species and 9.24 per cent of globally known plant species. It is home to 3,532 species of fish, 450 amphibian species, 738 reptilian species, 1,346 bird species and 436 mammals.
- The NBSAP provides a framework for biodiversity conservation, enables focus on sustainable use of biological resources, and ensures fair and equitable sharing of benefits derived from them, the government's action plan stated.
- Around eight of the 23 targets centre around reducing threats to biodiversity. They pertain to land and sea use change, pollution, species overexploitation, climate change, managing the threat of invasive alien species and ecosystem restoration.
- As part of its plans to achieve the target of managing invasive alien species, the action plan stated that the country has to "eliminate, minimize, reduce and or mitigate the impact of prioritized invasive alien species on biodiversity and ecosystem services".
- Trade in exotic wildlife species, abandoning of exotic pets, and farming of exotic fish for trade are some of the ways in which invasive alien wildlife gets introduced into the ecosystem.
- An important action point listed under this target is to develop quarantine measures to monitor introduction pathways and establish a national database on the extent and control of invasive alien species reported in India, the NBSAP stated.

### Do You Know:

- The Convention on Biological Diversity (CBD) came out of the same 1992 Rio Earth Summit that gave rise to the UN Framework Convention on Climate Change (UNFCCC). CBD aims to protect global biodiversity, restore natural ecosystems, and ensure that benefits from the world's biological resources are equitably distributed.
- This year's meeting — the 16th Conference of Parties to CBD, or COP16 — is the first after a landmark agreement on biodiversity was finalised two years ago. This agreement, the Kunming-

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



Montreal Global Biodiversity Framework that was concluded at COP15 in Montreal in 2022, lay down four goals and 23 targets to be achieved collectively by 2030.

## WHAT IS THE LIVESTOCK CENSUS AND WHY IS IT CONDUCTED?

Rajiv Ranjan Singh, the Union Minister of Fisheries, Animal Husbandry and Dairying, on Thursday launched the 21st Livestock Census in New Delhi. Here is all you need to know.

### **What is the livestock census all about?**

Conducted every five years, the census carries out a headcount of the number of domesticated animals, poultry, and stray animals in the country. The census takes into account information about the species, breed, age, sex, and ownership status of the animals in question.

Since 1919, a total of 20 livestock censuses have been carried out so far, with the last being conducted in 2019. The enumeration process for the 21st census will take place between October 2024 to February 2025.

Over the next few months, some 87,000 enumerators will visit each and every independent house, apartment, and enterprise, as well as institutions such as gaushalas (cattle sheds), dairy farms, poultry farms, veterinary colleges, and defence establishments, to gather information about livestock in India. The census is expected to cover 30 crore households in India.

### **Which animals will be counted in the 21st census?**

According to the Department of Animal Husbandry and Dairying, information on sixteen animal species will be collected in the 21st census. These include: cattle, buffalo, mithun, yak, sheep, goat, pig, camel, horse, ponies, mule, donkey, dog, rabbit, and elephant. In total, the census will capture information on 219 indigenous breeds of these sixteen species recognised by ICAR-National Bureau of Animal Genetic Resources (NBAGR).

Besides these, the census will also carry out a headcount of poultry birds such as fowl, chicken, duck, turkey, geese, quail, ostrich, and emu.

### **What is the objective of the livestock census?**

The livestock sector plays an important role in providing employment to people in rural areas.

In terms of productivity, especially in the agriculture sector, poultry and animal husbandry contributes to roughly 30% of the Gross Value Added (GVA). In the economy overall, the livestock sector's GVA stands at roughly 4.7%. For comparison, the whole agriculture sector contributes to a GVA of roughly 15%. GVA refers to the total output of a sector minus the cost of intermediate consumption.

Among other things, the data of the census will be used to estimate GVA from the livestock sector. It will also help formulate and implement policies relating to the census. "Livestock Census shapes policies, ensures sustainable growth of India's Livestock Sector," Union Minister Singh said while launching the census exercise.

The data from the census will also be crucial to track progress of achieving Sustainable Development Goals (SDGs) of the United Nations. The Livestock Census will provide data pertaining to Goal 2 (Zero Hunger), and Target 2.5 (to maintain genetic diversity in food and



nutrition), specifically Indicator 2.5.2 (The percentage of local livestock breeds that are at risk of extinction) of the SDGs.

**How will the 21st livestock census be different from the previous exercises?**

The census this time will be fully digitised, like the last one in 2019. This will include “online data collection through a mobile application, monitoring at various levels through a digital dashboard, capturing the latitude and longitude of data collection location, and generation of livestock census report through software.”

The 21st census will capture several new data points. These include:

Data on pastoral animals, pastoralists: The census will, for the first time, collect data on the contribution of pastoralists to the livestock sector, their socio-economic status, and livestock holding.

More details, granular information: The census will find out the proportion of households whose major income comes from the livestock sector. It will also contain data on the gender of stray cattle.

**What did the 2019 Livestock Census find?**

535.78 million was the total livestock population of India. This included:

- 192.9 million cattle
- 148.88 million goats
- 109.85 million buffaloes
- 74.26 million sheep
- 9.06 million pigs

All other animals taken together contributed just 0.23% of the total livestock population in India.

**WWF'S 73% WILDLIFE DECLINE REPORT: WHAT IT DOES AND DOESN'T MEAN**

The World Wildlife Fund's 2024 Living Planet Index (LPI) report published recently makes for some grim reading. The headline is a 73% average decline in wildlife populations since 1970 (Chart 1). While this trend is extremely worrying, the numbers presented are often misunderstood or misreported.

First, let us clarify what this doesn't mean. It doesn't tell us anything about the species lost; the number or percentage of species or populations that are declining/lost; or the number of extinctions. Any headline claiming that we have “lost 73% of wildlife” or that “73% of species have gone extinct” or that “73% of species are declining” is incorrect.

What this metric tells us is that across the 34,836 studied wildlife populations, the average decline was 73%. As we will see later, this doesn't mean 73% of populations are in decline; in fact, around half of the studied populations were in decline, while half were either increasing or stable.





The 2022 LPI reported an average decline of 69% since 1970. The 2024 update reports a 73% decline. From this, you might assume that wildlife populations have dropped by another 4 percentage points in the additional two years of data.

But almost none of this change has happened in the last few years, and the new LPI should not be seen as a simple extension of the previous one. Instead, the whole trend line for the LPI has shifted as the project has access to data for more populations and species, and the type of populations that are included has changed. The number of populations in the LPI increased by around 3,000 (just short of a 10% rise), and the number of species increased by around 250 (a 5% rise).

The other major change is that only native species are included in this update, whereas native and non-native species were included in previous reports. This explains a lot of the difference in this year's report. Chart 2 compares the LPI in 2022 and 2024 globally and for different regions. The lines have shifted, rather than the decline accelerating in the two most recent years.

The biggest shifts in this report, compared to the last, are for Europe and Central Asia; and Africa, where the reductions are more substantial in the most recent update. The reason for the change in Africa is a 45% increase in the number of populations included, many of which are declining. This has caused the LPI for this region to shift down. The exclusion of non-native species from the LPI has meant there are fewer populations counted in Europe and Central Asia, and this has been the main reason for the change in the trend in this region.

Across the whole data set, exactly 50% of populations were in decline; 43% were increasing; and the remaining 7% were stable. In Chart 3, we can see the share of populations in LPI that have trended in a given direction for different taxonomic groups. Only around half of wildlife populations declined in numbers. The rest were either increasing or stable. The share of populations are strongly or moderately increasing and decreasing.

So, not all populations are struggling. This is not to dismiss the steep decline many populations are seeing. Resources can be directed more efficiently to those areas and populations that need it most. It is more effective to target restorative and protection efforts to the populations that are in serious trouble than to assume that all populations are struggling.

**MAITHILI MISSED OUT ON CLASSICAL STATUS AS PROPOSAL DID NOT COME FROM BIHAR GOVT.**

While five languages were accorded the classical status earlier this month, Maithili missed out as the Bihar government had not forwarded the proposal officially.

The recommendation according classical status for a language is made by the Linguistics Expert Committee, which comprises representatives of the Union Ministries of Home and Culture and four or five linguistic experts at any given time. The panel is chaired by the president of the Sahitya Akademi. The recommendation then has to be approved by the Union Cabinet following which a Gazette notification is issued.

Sources in the committee told The Hindu that the proposal for Maithili had been forwarded by the Patna-based Maithili Sahitya Sansthan, but the same had not been forwarded to the Home Ministry by the Bihar government, which is the official procedure. Thus, though the 300-page proposal for Maithili was discussed at the meeting of the committee, it could not be considered due to this technicality.



### 12 million speakers

By the 2011 Census, there were approximately 12 million Maithili speakers in India. Maithili was included in the Eighth Schedule of the Constitution as a recognised Indian language in 2003. It is included as an optional paper in the UPSC exam. In March 2018, Maithili received the second official language status in Jharkhand. Besides, Jharkhand and Bihar, it is the second most spoken language in Nepal.

The Janata Dal(U) has been consistent in its demand for classical language status for Maithili and reiterated it on October 7, barely three days after the Union Cabinet cleared the same for the five languages. JD(U) national working president and Rajya Sabha member Sanjay Jha, who hails from Mithilanchal, made the call in a statement issued on X.

“Conservation and promotion of the Maithili language has been my top priority from the beginning. Due to my efforts, the expert committee of Maithili scholars constituted by the Central government made 11 recommendations in its report, which was completed on August 31, 2018. The first recommendation was — the Maithili language is about 1,300 years old, and its literature has been developing independently and continuously. Therefore, it should be placed in the category of classical language,” he said.

In a written reply in the Bihar Assembly in July, State Education Minister Sunil Kumar Singh, while asserting that the decision to accord classical status to languages was under the Central government, had said the Bihar Government would soon send the proposal to the Centre.

Among the five languages given classical status on October 3, the proposals for Assamese and Bengali had come from the respective State governments as had been the case for Marathi which has been pending since 2014.

## DHANTERAS, NATIONAL AYURVEDA DAY 2024: WHO IS DHANVANTRI, AND HOW IS HE LINKED TO BOTH

Ayurveda Day and Dhanteras: Prime Minister Narendra Modi launched health-linked projects worth nearly Rs 12,850 crore on October 29, which is the ninth Ayurveda Day and also the festival of Dhanteras. The national Ayurveda Day is celebrated on Dhanvantri Jayanti, or what is believed to be the birth anniversary of god Dhanvantri.

Why is Dhanvantri’s birth anniversary observed as Ayurveda Day? Also, why is he worshipped on Dhanteras? We explain.

### What is Ayurveda Day?

Ayurveda is the ancient Indian school of medicine that focuses on holistic well-being. The central government started Ayurveda Day celebrations in 2016 to create more awareness about Ayurveda. The birth anniversary of Dhanvantri was chosen to mark this day, as Dhanvantri is considered the physician of Gods. He is also considered to be an incarnation of Lord Vishnu.

“The term Ayurveda denotes the “knowledge of life”. Government of India has been observing Ayurveda Day every year on Dhanawantari Jayanti (Dhanteras) since 2016 to raise awareness about Ayurvedic principles, medicinal herbs, and lifestyle practices. In India, the knowledge of Ayurveda is attributed to Dhanawantari, the divine physician who received this knowledge from the Lord Brahma. Ayurveda Day honors Lord Dhanvantari’s contributions, aiming to raise



awareness about Ayurveda’s foundational principles, healing practices, and lifestyle approaches,” an article by the government’s Press Information Bureau (PIB) states.

The logo of the National Medical Commission (NMC) also features a colourful image of Dhanvantri.

For Ayurveda Day 2024, the theme is ‘Ayurveda Innovation for Global Health’, and the focus is on four areas: women’s health, workplace wellness, school wellness programmes, and food innovation.

### **Who is Dhanvantri, why is he worshipped on Dhanteras?**

Dhanvantri is believed to have appeared from the ocean bearing a pot of amrita (nectar of immortality) during ‘samudra manthan’, or the churning of the ocean by the Devas and the Asuras.

According to author Devdutt Pattanaik, Brahma had advised the Devas to churn the ocean of milk for amrita. The mountain Mandara was placed on the back of Akupara, king of turtles, and the churning was done using the serpent Vasuki.

After Dhanvantari appeared carrying amrita, Lord Vishnu took the appearance of Mohini, and, tricking the asuras, distributed it to the Devas.

Dhanvantri, thus, is worshipped on the day of his appearance to pray for good health, and a nourished, robust life.

“It is believed that first, Dhanvantri appeared during the samudra manthan, and then Goddess Lakshmi in the evening. Lakshmi after her appearance chose to wed Lord Vishnu. Thus, on the day of Dhanteras, both Dhanvantri and Lakshmi are worshipped, for good health, prosperity, and all things auspicious,” Dr Dipakbhai Jyotishacharya, who runs the Parashar Jyotishalaya in Gujarat’s Vapi, told The Indian Express.

Kuber, the treasurer of the Gods, is also worshipped on Dhanteras.

The website of Alandi Ayurveda Gurukula, based in Colorado, narrates another belief, according to which Dhanvantri in an incarnation appeared on Earth as the King of Kashi, Divodasa. In this form, he passed on the knowledge of Ayurveda, which he had learnt from Lord Brahma, to a group of sages, which included Susruta, the great Indian surgeon.

Dhanvantari is often depicted with four hands, holding a pot of amrita, a discus, a conch, and a leech. Sometimes, along with amrita and conch, he is shown holding scriptures and herbs.

## SHORT NEWS

### NATIONAL PHARMACEUTICAL PRICING AUTHORITY (NPPA)

— In line with the government’s commitment to ensure the availability of drugs at affordable prices, the NPPA has issued an office memorandum directing the concerned manufacturers to reduce the MRP on three anti-cancer drugs, Trastuzumab, Osimertinib, and Durvalumab.

— NPPA is an organization of the Government of India which is responsible for regulating market prices of essential medicines.



## RASHTRIYA EKTA DIWAS

- Rashtriya Ekta Diwas (National Unity Day) is celebrated every year on the birth anniversary (31st October) of Sardar Patel.
- The celebration of Ekta Diwas was announced by Prime Minister Narendra Modi in 2014.
- Vallabhbhai Jhaverbhai Patel, famously known as Sardar Patel was the first Deputy Prime Minister and Home Minister of India. He played a pivotal role in the unification of India.
- The Sardar Patel statue called the Statue of Unity, the world's tallest statue, twice the height of the Statue of Liberty in the US, is located in Gujarat's Narmada.

## SIMILIPAL TIGER RESERVE, ODISHA

- After a nearly 36-hour journey covering over 1,000 km, a tigress from the Tadoba-Andhari Tiger Reserve in Maharashtra on Sunday reached its new home – the Similipal Tiger Reserve (STR) in Odisha.
- The STR, which sprawls over 2,750 square km in Odisha's Mayurbhanj district adjoining Jharkhand and West Bengal, is Asia's second largest biosphere, and the country's only wild habitat for melanistic royal Bengal tigers.
- Many royal Bengal tigers of Similipal belong to a unique lineage with higher-than-normal levels of melanin, which gives them black and yellow interspersed stripes on their coats. These tigers are not entirely black, and are therefore more accurately described as being pseudo-melanistic.
- Melanism is a genetic condition in which an increased production of melanin, a substance in the skin that produces hair, eye, and skin pigmentation, results in black (or nearly black) skin, feathers, or hair in an animal.

## BANDHAVGARH TIGER RESERVE

- Three more wild elephants have died in Madhya Pradesh's Bandhavgarh Tiger Reserve (BTR) after consuming a toxic substance, taking the toll to ten so far this week.
- Bandhavgarh National Park which came into existence in 1968 was officially entitled as Bandhavgarh Tiger Reserve under Project Tiger (1973).
- It is mainly recognised for the presence of majestic Royal Bengal Tiger, which is the National Animal of India.
- The BTR consists of three distinct areas i.e. 'Bandhavgarh National Park', 'Panpatha Wildlife Sanctuary' which is the "Core Area" and the adjoining notified "Buffer Area" spread across the districts of Umaria, Shahdol and Katni.

## KODO MILLETS

- Ten wild elephants from a herd of 13 died over the last three days in Madhya Pradesh's Bandhavgarh Tiger Reserve. According to an official statement, the deaths could have been caused by "mycotoxins associated with kodo millet".



- Kodo millet (*Paspalum scrobiculatum*) is also known as Kodra and Varagu in India. The crop is grown in India, Pakistan, the Philippines, Indonesia, Vietnam, Thailand, and West Africa.
- The tropical and subtropical regions are best suited for Kodo millet cultivation and it is grown on poor soils, and widely distributed in arid and semi-arid regions.
- **CPA** (Cyclopiazonic acid) is one of the major mycotoxins associated with the kodo millet seeds causing kodo poisoning which was first recognised during the mid-eighties.
- Millets are more prone to fungal infection followed by bacterial and viral; these infections adversely affect the grain and fodder yield. Ergot is a parasitic fungal endophyte that grows in the ear heads of various blades of grass, most frequently on kodo millet.

#### HASDEO ARAND

- The Hasdeo forest in Chhattisgarh saw villagers clash with the police earlier this month, after tree-felling for mining of coal resumed in the green belt.
- The Hasdeo Arand is referred to as the “lungs of Chhattisgarh”, with a wealth of biodiversity. It is the “largest un-fragmented forests in Central India consisting of pristine Sal (*Shorea robusta*) and teak forests.”

#### PRIVATE MILITARY AIRCRAFT PRODUCTION

- The TATA Advanced System Ltd. (TASL)-Airbus Final Assembly Line (FAL) facility has been inaugurated in Vadodara's Harni area.
- It is the first private sector final assembly line for military aircraft in India. It will manufacture the C-295 medium-lift tactical transport aircraft for the Indian Air Force (IAF).
- The facility was jointly inaugurated by Prime Minister Narendra Modi and his Spanish counterpart Pedro Sanchez on 28th October.
- The C295MW is a transport aircraft with a 5 to 10-tonne capacity and a maximum speed of 480 kmph. It has a rear ramp door for quick reaction and para-dropping of troops and cargo. Short take-off and landing from semi-prepared surfaces are some other features.
- According to Airbus, the C295 is a versatile tactical transport that can perform a variety of missions, such as carrying troops and cargo, maritime patrol, airborne warning, surveillance and reconnaissance, armed close air support, medical evacuation, VIP transport, and airborne firefighting.

#### AIIMS, RISHIKESH

- Prime Minister Narendra Modi on 29th October virtually inaugurated the country's first government helicopter ambulance service at AIIMS Rishikesh.
- A helicopter will be stationed under the service at the AIIMS from where it will be sent anywhere within a radius of 150 km to airlift anyone who has met with an accident to the medical facility.



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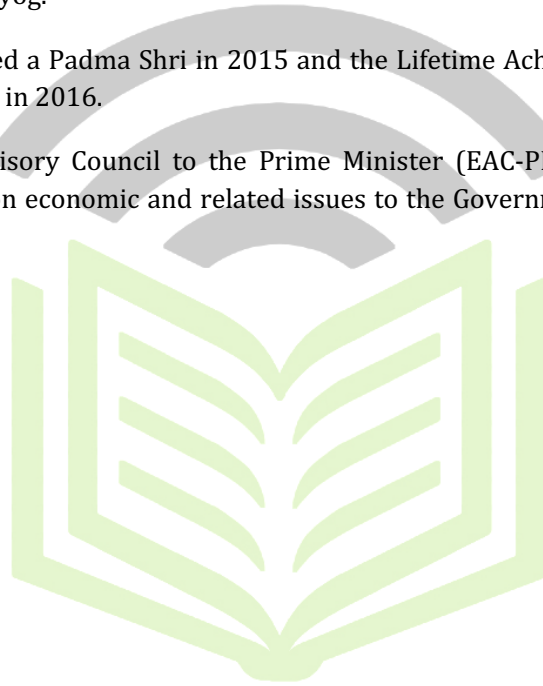
— SALT TYPHOON

Salt Typhoon is the name Microsoft cybersecurity experts have given to a Chinese group suspected of using sophisticated techniques to hack into major systems — most recently, US telecommunication companies.

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BIBEK DEBROY

- Bibek Debroy who was Chairman of PM Modi's Economic Advisory Council, dies at 69.
- Debroy was appointed Chairman of PM-EAC on September 25, 2017, when he was also a member of the NITI Aayog.
- Debroy was awarded a Padma Shri in 2015 and the Lifetime Achievement Award by the US-India Business Summit in 2016.
- The Economic Advisory Council to the Prime Minister (EAC-PM) is an independent body constituted to advise on economic and related issues to the Government of India, specifically to the Prime Minister.



DreamIAS

**BUSINESS & ECONOMICS****EXPRESS VIEW ON US SANCTIONS ON INDIAN COMPANIES: DELHI SHOULD TREAD CAUTIOUSLY**

On Wednesday, the US imposed sanctions on about 400 entities and individuals across the world, including 19 Indian firms and two Indian nationals, for allegedly helping Russia's war efforts in Ukraine. Most of the Indian entities sanctioned are suppliers of electronic components, a few supply aircraft parts and machine tools and components, among other items. The US State Department says that the move aims to address evasion of sanctions and target entities in multiple countries, including China, Malaysia, Thailand, Turkey and the UAE, apart from India, for selling "items and other important dual-use goods to Russia, including critical components that Russia relies on for its weapons systems to wage war against Ukraine". Dual-use goods can be utilised for both civil and military applications. Many such items are part of the Common High Priority List (CHPL) made jointly by the US, the EU, Japan, and the UK. The CHPL lists numerous items that Russia "seeks to procure for its weapons programmes".

In the aftermath, while there may be a temptation to grandstand against the US sanctions, it would help to understand their context, and to assess their consequences for India's domestic interests. There is a war raging in Europe and there is a growing sense that it is likely to escalate. As such, the West is tightening sanctions to prevent Russia's military capability from growing. The second critical aspect is that the sanctions have a broad sweep, across several countries. India or Indian firms have not been specifically targeted or singled out. The third key point is that while India has differences with the US on Russia, it is also true that India has a strong partnership with the US when it comes to China.

The Indian government should neither take offence at the sanctions, nor ignore them as the decision of an outgoing US President. It should, instead, treat them as a caution. In the past, when it came to crude oil sanctions, the US had provided India some relief but the current restrictions refer to goods the US views as directly boosting Russia's military capability. Delhi would do well to focus on the need to protect Indian businesses from getting caught in the crossfire. India had set up export control mechanisms as part of the nuclear deal with the US — it is time to update them. The government needs to educate industry about the export restrictions, and possibly even licence some of the critical items, to ensure that Indian businesses are not adversely affected by the ongoing conflict.

**PROTECTIONIST MEASURES ON STEEL IMPORT WILL HURT MSME'S: EEPCC**

Restricting steel imports from China and other countries could severely impact Indian engineering goods manufacturers and exporters, especially Micro, Small, and Medium Enterprises (MSMEs), as they rely on competitive steel prices to maintain their operational viability, Arun Kumar Garodia, Chairman of the Engineering Export Promotion Council of India (EEPC) has said.

- This comes at a time when large Indian steel manufacturers have asked the government to double tariffs on steel imports to 15 per cent to protect domestic steel production from rising imports from China. Similar demands have been made by US and European steel producers amidst a surge in Chinese steel exports globally.



- However, small engineering exporters argue that steel imports are not rising from China alone and that there is a significant price gap between domestic and Chinese steel, with cheaper imported steel enabling MSMEs to remain competitive.
- “During the first five months of the current financial year 2024-25, India’s crude steel production increased by 4.44 per cent, while finished steel production grew by 5.30 per cent compared to last year. Meanwhile, steel consumption rose by a substantial 13.78 per cent. This notable gap between production and consumption highlights the need for imports to meet the growing domestic demand,” EEPC said in a statement.
- While the volume of imports from China has grown, the share of total imports from China has slightly declined from 31 per cent to 30.5 per cent. In contrast, Japan’s share of imports has risen from 14.3 per cent to 24.6 per cent. This broader increase in imports, particularly from India’s free trade agreement (FTA) partners, may necessitate a closer examination of the rules of origin criteria under these FTAs, EEPC said.

**Do You Know:**

- Steel is a de-regulated sector. The Government’s role is that of a facilitator which lays down the policy guidelines and establishes the institutional mechanism/structure for creating conducive environment for improving efficiency and performance of the steel sector.
- In this role, the Government has released the National Steel Policy 2017, which has laid down the broad roadmap for encouraging long term growth for the Indian steel industry, both on demand and supply sides, by 2030-31.
- Government of India is implementing a Production-linked Incentive (PLI) Scheme for Specialty Steel. It is expected that the speciality steel production will reach 42 MT by the end of 2026-27.
- India’s crude steel capacity was 179.5 mt in 2023-24.
- India is the second largest producer of crude steel. China was the world’s largest crude steel producer in 2023 (1,019.1MT) followed by India (140.8 MT), Japan (87.0 MT) and the USA (81.4 MT). (Source: For India is JPC and World Steel Association for others)

#### A SLACKENING MOMENTUM IN URBAN DEMAND

Over the past few days, leaders from corporate India have raised concerns about flattening consumer demand in the economy. For instance, top executives at Tata Consumer Products Ltd are talking about the “softness” in urban demand. Their counterparts at Nestle India have pointed out that mega cities and metros are showing signs of “muted demand”. Car-makers and vehicle dealers have also been stressed because of alarming inventory levels. The evident slump in demand is hurting both the top line (revenue) as well as the bottom line (profits) of corporate India. Rating agency Crisil analysed 435 companies that account for almost half of the listed market capitalisation, and found that at 5 per cent to 7 per cent, corporate revenue growth in the second quarter (Q2, or July-August-September) this year will be the lowest in the past 16 quarters. An analysis of 197 companies by Bank of Baroda found that the growth rate in net profit of these companies in the second quarter was just 6 per cent — a sharp dip from a growth of over 27 per cent in the same quarter last year.





It should not surprise anyone, then, that companies are scaling down their salary outlays. According to Nomura Research, real salary and wage expenditure growth of listed non-financial corporates — a proxy measure for real urban wages — has moderated to 0.8 per cent in Q2 FY25 from 1.2 per cent in Q1 FY25, and is down from 2.5 per cent in FY24 and 10.8 per cent in FY23. These worrying trends are not just about corporate India's worsening prospects. They point to a deceleration of the broader economic momentum that deserves the attention of policymakers. For one, as noted by business heads, there is a distinct and growing divide between rural and urban India's consumption growth rates. Analysts point out that urban demand is likely to stay soft thanks mainly to lower salary increments and high interest rates. More broadly, economists are now reevaluating their forecast for India's annual gross domestic product. In a recent research note, for instance, Nomura India states that India's growth glass "looks half empty" and expects a slower GDP growth in the second quarter of 2024-25 compared to the first quarter. The GDP growth rate in the first quarter itself was slower than the fourth quarter of the previous financial year.

The finance ministry's latest monthly review noted some of the emerging challenges such as the rural-urban consumption divergence, but blamed the slump in urban demand on softening consumer sentiment, limited footfall due to above-normal rainfall, and seasonal periods during which people tend to refrain from new purchases. Overall, policymakers remain more sanguine about the outlook, expecting an uptick in demand during the ongoing festive season as well as the boost that GDP will get from a rise in government spending. But in a worsening geopolitical landscape, domestic policies will have to do the heavy lifting to ensure that India's prized growth momentum does not suffer.

#### CORE CORRECTION

Heavy August rains dampened industrial activity, resulting in the first contraction in India's factory output since October 2022. The signals for a significant September resurgence do not appear very promising, with the late withdrawal of the southwest monsoon also skewing some activity such as power demand. Output from India's eight core sectors declined 0.8% in September relative to August, and was an insipid 2% higher than last September. These infrastructure sectors constitute about 40% of industrial production, and had contracted for the first time in 42 months in August — the Ministry has revised the de-growth level to 1.6% from 1.8% estimated initially. These sectors have now grown just 4.2% in the first half of 2024-25, almost halving from 8.2% in the first half of last year, and significantly under the 2023-24 growth pace of 7.6%. While year-on-year growth numbers may swing due to base effects, of concern is a consistent decline in the Index of Core Industries (basically the absolute production levels) since May. In September, the index slipped for the fourth successive month — 8% below May's value. Overall industrial output, economists reckon, may come out of the August trough in September but with a weak growth print at best.

This slowdown in industrial activity is worrisome amid anxiety about weakening urban consumption of durables such as cars as well as daily use items, reflected in weak second quarter results of fast-moving consumer goods firms. Though rural demand is seen to be improving after a healthier monsoon, tremors in urban spends will pull the domestic consumption engine of India's growth to sub-optimal levels. Government accounts show that capital spending on public infrastructure projects by the Centre has shrunk 15% this year — although capex spiked in July after the 2024 general election dented the first quarter numbers, the pace receded in August and September. This may explain some of the weak output trends for core sectors such as steel that



hinge on construction activity. Poor vehicle sales and cheaper imports may have also weighed in to drag steel output growth to a 33-month low of 1.5% in September, with output at its lowest since December 2023. There may be a tentative recovery afoot in private investments, but public infra spends that have spearheaded growth in recent years need to lead the way. The Centre's ₹11.11 lakh crore capex goal for the year acknowledges this, and it must now ramp up these spends to get closer to, if not entirely meet, that target. This would be critical to keep growth ticking along and push back concerns about India entering a cyclical slowdown.

#### EXPLAINSPEAKING: HOW FOOD INFLATION HITS RURAL INDIA MORE THAN URBAN AREAS

Over the past few days, several observers of the Indian economy have made the point that urban India, especially the larger mega cities, are the new areas of concern when it comes to economic activity while rural India is witnessing an uptick. In simpler terms, all this means is that people in urban India are not buying (consuming) as much stuff (be it cars or cereals) as companies expected them to buy while people in India's rural areas seem to be doing much better than earlier.

To be sure, the Finance Ministry's own monthly review (for September) states "Rural demand continues to strengthen in H1 of FY25". "H1 FY25" refers to the first half (or the first six months) of the 2025 financial year — April to September. "The improvement in rural demand is reflected in rising Fast Moving Consumer Goods (FMCG) sales reported by Nielsen IQ, which grew by 5.2 per cent (volume growth) in Q1 of FY25, higher than the 4 per cent growth in the corresponding quarter of the previous year," it further states. Again, Q1 refers to the first quarter or the first three months — April, May and June.

#### **inflation**

But, oddly enough, if one looks at the inflation data closely, it becomes clear that high food inflation stung the rural households more than their urban counterparts.

Food inflation refers to the rate at which food prices went up over the same month last year.

The weightage that food inflation has in calculating the overall inflation in rural and urban areas. Now weightage differs from person to person: If you always walk to your office and don't own a car, then higher car price inflation will have no effect on you per se. Similarly, people who do not have kids will not face the brunt of high educational inflation. By the same logic, someone who drives for work and has four kids in the school-going cohort will be far more affected.

But the broader point is that your consumption pattern affects your inflation rate. In rural areas, food inflation tends to have a much higher bearing on overall inflation while it accounts for a smaller bit in the urban areas.

For the month of September when inflation suddenly jumped sharply, even though the food & beverages inflation in rural India was a tad lower than urban India, its negative effect has to be more because its weightage (in the rural consumption basket) is considerably more.

"Food inflation contributed 73.1 per cent to the headline rural inflation. In contrast, food inflation contributed only 56.1 per cent of the headline urban inflation. This stark disparity is because of the disproportionately higher weight food holds in the rural consumption basket," states a research note by CMIE's (Centre for Monitoring Indian Economy) Economic Outlook.



Take another specific example: Vegetable prices. One can wonder that if vegetable prices go up by 10%, how does it matter whether you are in urban India or rural India?

“Vegetable inflation contributed the most to overall headline inflation. In rural and urban areas vegetable inflation was almost the same at 36 per cent and 35.9 per cent, respectively. But, the sting is different. Vegetables have a weight of 7.5 per cent in rural CPI and 4.4 per cent in urban CPI. Due to the relatively larger importance of vegetables in rural consumption, it contributed to 45.8 per cent of the headline rural inflation. In contrast, vegetable inflation only contributed 31.3 per cent to headline urban inflation,” explains the CMIE note.

Similarly when on September 14 the Union government raised the import duty hike on edible oils, it led to a rise in prices but the negative effect was more in rural areas. In urban areas, the price index increased by 2.4 per cent in September in comparison to August. But it increased by a higher 3.2 per cent in rural areas.

The analysis above has explained how rural India is worse affected even when food inflation is a tad lower than urban India. Often food inflation is even higher in rural India. In fact, it has been higher for most of the current financial year.

The upshot: Rural India may be consuming more at a faster rate than what it did last year, but high food inflation is still pinching it more than it is hitting urban India.

**Do You Know:**

- The two most-often used inflation rates in the country are the year-on-year are the wholesale price index (WPI) based inflation rate and the consumer price index (CPI) based inflation rate.
- The former is called the wholesale inflation rate and the latter is called the retail inflation rate. Both WPI and CPI are price indices. In other words, these are two different baskets of goods and services. The government assigns different weights to different goods and services based on what is relevant for those two types of consumers.
- The CPI-based inflation data is compiled by the Ministry of Statistics and Programme Implementation (or MoSPI) and the WPI-based inflation data is put together by the Department for Promotion of Industry and Internal Trade (or DPIIT).

## A PICTURE OF A GROWING ECONOMIC DIVIDE IN INDIA

In September this year, the Economic Advisory Council to the Prime Minister (EAC-PM) released a paper titled, ‘Relative Economic Performance of Indian States: 1960-61 to 2023-24’. It presents the share of each State in the country’s income and the per capita income compared to the all-India average.

The data tell us the importance of each State in the country’s economy and the average welfare of the citizens of each State relative to the all-India level. The average hides the inequality. For instance, Maharashtra, which is the highest contributor to the nation’s economy, has a per capita income of about 150% of the national average. But, it consists of Mumbai, which is rich, and Vidharba, which is known for farmers’ suicides due to poverty. Mumbai’s rich contribute the largest amount of direct taxes and the city’s municipality is the richest in the country. But it has huge slums with uncivilised living conditions.



### Regional differentials

The report points to the consistently better performance of the western and southern regions of India and the weak performance of the eastern States. The northern States have done poorly with the exception of Haryana and Delhi. Overall, the picture is of a growing divide in the country, which is not good for a federal and diverse nation such as India.

This growing gap is leading to the questioning of federalism. Representatives of the richer States recently held a conclave in Kerala and argued that they are not receiving their fair share of resources from the Centre. They say that they contribute much more to the national kitty than what the Centre gives back to them. In the year 2000 also there was a 'Conclave of the successful' to protest the devolution by the Eleventh Finance Commission. So, slowly, the spirit of federalism is weakening.

The report lists liberalisation (1991) as a marker of when the southern States began to perform better. But it does not go into the causes. It also points to the coastal areas doing better, which includes Odisha in the east. But, could it be that the poorer performance of some States is linked to the better performance of some others?

Investment is the most important determinant of output. The higher the level of investment, the larger the size of the economy. So, for a more complete analysis, the level and the rate of investment in each State needs to be studied. The better-off States typically have a higher rate of investment than the poorer States, and, therefore, perform better.

Investment comes from the public and the private sectors. The first is based on policy decisions while the second is determined by profitability considerations. Government may invest in a backward area to develop it even if no profit accrues in the short run. The private sector will not do so unless the government gives it concessions such as tax breaks and electricity at concessional rates.

On its own, private investment goes to developed areas where a large market ensures profits. So, urban conglomerates such as Mumbai, Delhi, Chennai, Bengaluru and Hyderabad are preferred investment destinations. Haryana which is contiguous with Delhi (with the highest per capita income) has also benefited. Kolkata is not preferred for other reasons. Coastal regions are preferred since they enable cheaper access to external markets through exports. Also, cheap imported inputs may be available.

Infrastructure availability and quality of governance in a State are important determinants of profits. Richer States are better in both and attract more investments. Better governance is also linked to better quality of education and health. This leads to the availability of more productive labour. But this is not critical since there is huge migration from the poorer to the richer States.

Private investment is 75% of the total investment. After the launch of the New Economic Policies (NEP) in 1991, the public sector's role as the leading sector shifted to the markets. Therefore, more investment has been going to the richer States where profits are higher. Further, the financial sector which guides investments became more important after 1991. The considerable household savings increasingly got diverted from the poorer States to the richer ones which offered higher profits. This is reflected in the low credit-deposit ratio of the poorer States when compared to the richer States. This diversion of investment leads to growing disparity.



Finally, the poorer States have a larger share of the unorganised sector working at low productivity and low incomes. Under the NEP, policy has favoured the organised sector. This has been aided by the construction of freight corridors and highways which enables this sector to penetrate into the hinterland. So, the organised sector has grown at the expense of the unorganised sector and fuelled the faster growth of the richer States.

In brief, the NEP has played a major role in the growing divide across States since 'liberalization', as the EAC-PM paper points out.

West Bengal and Kerala are special cases. Both States have had strong Left movements and labour militancy. So, the private sector has invested little in these States. The border States of India have received less public investment for strategic reasons. It is also because many of them suffered from insurgency which scared the private sector.

Opposition-ruled States have accused the Centre of playing politics with public investment. The often flaunted slogan of 'Double Engine ki Sarkar' captures this idea. Further, growing cronyism in India impacts investment decisions since political signals are important. This spoils the investment climate by lowering the risk for the cronies while raising it for others. The result is a decline in the overall investment rate which impacts the poorer States more.

The black economy is also proportionately more in the poorer States. This vitiates the investment climate due to policy failure and weak governance and reduces the investment they receive. Therefore, it reduces their growth potential.

#### **Threat to federalism**

The persisting differentials in the economic performance of different States are threatening federalism. Thus, policy needs to reverse this trend. Even keeping differentials at the present level is no more an option. This requires a reversal of the trend of private investment, weak governance and poor infrastructure in the States that are lagging.

Both the Centre and the States need to act. The States need to improve governance and reduce the levels of corruption in their jurisdiction. Public expenditures on social sectors need to be raised substantially. Private investment in the poorer States cannot be raised by fiat in the market-driven economy. It requires a change in the Centre's strategy of favouring the organised sector at the expense of the unorganised sector. If the focus shifts to the unorganised sector, the incomes of the marginalised would rise and that would boost demand and production in the poorer States. As demand rises in these States, it would attract more private investment.

The organised sector, which is constrained by shortage of demand, would also benefit. More concessions from the government are not what they need since they have enough resources to increase their investment. These policy changes will not mean that the richer States would not grow; only disparities would decline. This would be development from below which would strengthen federalism and help preserve the nation's unity.

#### **INDIANS LOST ₹120 CRORE IN DIGITAL ARREST FRAUDS IN JANUARY-APRIL 2024**

- Online frauds and criminals typically call potential victims and tell them that they have sent or are the intended recipients of a parcel containing illegal goods, drugs, fake passports or any other contraband item.

—In some cases, the criminals contact relatives or friends of the target and tell them that the target



has been found to be involved in a crime or an accident, and is in their custody. —The criminals, who often use pictures or identities of police personnel to convey authenticity, usually demand money from the target for a ‘compromise’ and closure of the case. —In certain cases, the victims are “digitally arrested”, and forced to stay visible over Skype or other video conferencing platforms to the criminals until their demands are met

- The cybercriminals are also known to use studios that look like police stations or government offices, and to wear uniforms similar to those of law enforcement agencies.
- A large number of complaints have been made on the National Cyber Crime Reporting Portal (NCRP) about intimidation, blackmail, extortion, and digital arrests by cybercriminals posing as police officers, the Central Bureau of Investigation (CBI), Narcotics Department, Reserve Bank of India (RBI), and Enforcement Directorate (ED), etc.

#### Do You Know:

- The Indian Cyber Crime Coordination Centre (I4C) under the Ministry of Home Affairs, which coordinates the response to cybercrime in the country, has blocked more than 1,000 Skype IDs linked to such activities, after collaborating with Microsoft.
- The Home Ministry is working with other ministries and their agencies, RBI, and other organisations to combat these criminal activities. I4C has been providing inputs and technical support to police forces of states/ UTs to identify and investigate cases.
- I4C has also posted infographics and videos on its social media platform Cyberdost, and on its handles on X (Twitter), Facebook, Instagram, etc., to increase awareness. The Ministry has advised citizens to be alert and spread awareness about cybercrime.
- In its analysis of trends from January to April, the Indian Cybercrime Coordination Centre (I4C) found that 46% of cyber frauds reported in this period — in which the victims cumulatively lost an estimated Rs 1,776 crore — originated in these three countries.
- National Cybercrime Reporting Portal (NCRP) data show 7.4 lakh complaints were made between January 1 and April 30 this year, while 15.56 lakh complaints were received in all of 2023. A total 9.66 lakh complaints were reported in 2022, up from 4.52 lakh the previous year.
- According to I4C, there are four types of scams — digital arrest, trading scam, investment scam (task based) and romance/dating scam.

#### CENTRE WARNS AGAINST ILLEGAL DIGITAL PAYMENT GATEWAYS

The Indian Cyber Crime Coordination Centre (I4C), which functions under the Union Home Ministry, has issued an alert against illegal payment gateway created using mule bank accounts by transnational organised cyber criminals facilitating money laundering as a service.

The Ministry on Monday said that recent nationwide raids by the Gujarat and Andhra Pradesh Police had revealed that trans-national criminals had created illegal digital payment gateways using mule or rented bank accounts.

This illegal infrastructure facilitating money laundering as a service were used for laundering proceeds of multiple nature of cybercrimes.



As reported by The Hindu on October 24, mule bank accounts were one of the significant contributors to the online financial scams that could potentially siphon off 0.7% of the country's GDP.

According to a presentation by the I4C, seen by The Hindu, nearly 4,000 mule bank accounts are identified every day by investigating agencies.

Some of the payment gateways identified during operation were PeacePay, RTX Pay, PoccoPay, and RPPay. These gateways are learnt to be providing money laundering as a service and are operated by foreign nationals, the Ministry said.

I4C has advised citizens not to sell or rent their bank accounts, company registration certificate, and Udhyaam Aadhaar Registration certificate to anyone. Illicit funds deposited in such bank accounts can lead to legal consequences, including arrest.

"Banks may deploy checks to identify misuse of bank accounts that are used for setting up Illegal Payment Gateways. The citizens must immediately report any cybercrime on helpline number 1930 or [www.cybercrime.gov.in](http://www.cybercrime.gov.in)," the Ministry said.

#### SEBI PROPOSES 30-DAY DEADLINE FOR MF DEPLOYMENT OF NFO PROCEEDS

The Securities and Exchange Board of India (Sebi) Wednesday proposed changes in the regulatory filing procedure of new fund offers (NFOs) by mutual funds in a move aimed at protecting the innovative ideas being proposed by a fund house in its new scheme.

As per a proposal, if a fund house comes out with an innovative scheme with new features, the regulator will allow it to maintain the secrecy and the scheme information document (SID) will be available in the public domain only five working days before the scheme's launch. In a consultation paper issued Wednesday, Sebi proposed that the asset management company (AMC) can submit the initial draft of SID only to the Sebi.

The existing system has led to concerns that it allows competitors to replicate the investment ideas. Currently, an AMC has to upload the so-called draft SID ahead of the launch of NFO. The SID contains all the vital information of the new fund.

"It has been observed that once a draft SID proposing a new product is uploaded on the Sebi website, other AMCs tend to follow suit. At times, this leads to a situation where the NFO of an AMC which followed suit precedes the NFO of AMC that conceived the idea, and the AMC proposing the new product loses its first-mover advantage," Sebi said.

In another consultation paper, Sebi said AMC should specify achievable timelines in the SID regarding the deployment of the funds as per the specified asset allocation of the scheme and should garner funds during the NFO accordingly.

"AMCs may be mandated to deploy the funds garnered in NFO within 30 business days from the date of allotment of units. In exceptional cases the AMC is not able to deploy the funds in 30 business days, reasons in writing, including details of efforts taken to deploy the funds, should be placed before the Investment Committee," the Sebi paper said.

The Investment Committee may extend the timeline by 30 business days, while also making recommendations on how to ensure deployment within 30 business days going forward and



monitoring the same. The Investment Committee should examine the root cause before approving part or full extension, the regulator said.

#### FUNDING FREEZE BRINGS MGNREGS TO A STANDSTILL IN WEST BENGAL

On March 9, 2022, the Central government issued an order freezing the transfer of funds for the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) for West Bengal, citing irregularities in implementation. This unexpected halt resulted in protests by worker and vendor unions. On September 23, 2024, the Calcutta High court observed that the scheme must continue to operate even while the irregularities are investigated. Data show that the fund freeze severely affected all stakeholders.

Post-COVID-19, the share of MGNREGS workers reduced across many States neighbouring West Bengal, between 12% (Uttar Pradesh) and 20% (Jharkhand). The next year, the cutback continued, but at a slower rate, with the States' worker reduction share limited to less than 7%. However, West Bengal saw a steep and outsized collapse in the same periods: 82% and 100%, respectively. While States such as Jharkhand also faced issues of payment delays, the accompanying worker decline was not as severe.

Household employment rose across all groups during and immediately after COVID-19 (2020-2022) before falling sharply post the funding freeze. In FY 2023, no household in West Bengal completed the mandated 100 days of work. However, the drop in employment did not affect all groups in a similar manner. The share of Scheduled Caste (SC) and Scheduled Tribe (ST) households reduced sharply from 24% to 10% and 8.4% to 4.8%, respectively, between FY 2022 and FY 2023. In the same period, the share of other households rose sharply from 68% to 85%. This indicates that there was "rationing" of work, i.e., whatever little work existed, it was being taken up more by other households, while the participation of SC/ST households in the scheme declined sharply.

Following the funding freeze and the exit of workers across the board, the number of completed works shrank from 10.7 lakh in FY 2019 to just 22,000 in FY 2023. The number of ongoing works in FY 2022 (11.5 lakhs) was the same as new and spilled-over work in FY 2023, demonstrating that no new works were created between these years. This shows the cascading effects of the funding freeze, wherein lack of funds lead to payment delays, which in turn lead to falling wages and falling demand for work.

MGNREGS expenditure fell from ₹7,240 crore in FY 2019 to ₹183 crore in FY 2023. The number of gram panchayats that had no expenditure at all in FY 2023 was 2,813 (84%). Typically, wages comprise a majority of MGNREGS expenses. Between 2019 and 2022, wages comprised 66-80% of total expenses, while administration costs did not exceed 3%. However, this composition mechanically flipped in 2023 due to the sharp collapse in wage payments, and the complete lack of material payments to vendors.

#### WHAT CHALLENGES DOES INDIA FACE IN FERTILIZER IMPORTS?

##### The story so far:

With the crisis continuing in Ukraine and Gaza, experts and policymakers are concerned about further increases in the prices of the components used for making petroleum-based chemical fertilizers. Recently, Senior Economist of the Food and Agriculture Organization Nicholas Sitko





told The Hindu that India has to increase its own fertilizer production capacity. The Agriculture Minister of the country's largest foodgrains producing Uttar Pradesh recently complained that the State has the stock of fertilizers for only 10 more days. The sowing of winter rabi crops has started in almost all the wheat-growing States and fertilizers such as Diammonium phosphate (DAP) and NPK [Nitrogen, Phosphorus, and Potassium] are essential for its growth.

#### **What is the current import fertilizer import scenario?**

Though the latest data on import is yet to be made available by the Ministry, the Standing Committee of Parliament on Chemicals and Fertilizers, in August 2023, tabled a report on 'Planning for Fertilizers Production and Import Policy on Fertilizers Including GST and Import Duty Thereon' in both the Houses. It expressed concern that the "production capacity of fertilizers does not commensurate with its demand/requirement and, therefore, the gap between demand and supply is met through imports." According to the report, about 20% of the domestic requirement of urea, 50-60% of the domestic requirement of DAP, and 100% of the domestic requirement of Muriate of Potassium (MOP, or Potash) is met through imports.

#### **How has India's fertilizer production changed?**

In 2021-22, India's yearly consumption of all major chemical fertilizers was approximately 579.67 lakh metric tonnes (LMT), comprising 341.73 LMT of urea, 92.64 LMT of DAP, 23.93 LMT of MOP, and 121.37 LMT of NPK. In 2020-21, the total consumption of fertilizers was about 629.83 LMT. The country produced 435.95 LMT of chemical fertilizers in 2021-22, resulting in a shortfall of 143.72 LMT relative to demand. While MOP is not produced here, in 2021-22, India produced 250.72 LMT of urea, 42.22 LMT of DAP, 89.67 LMT of NPK, and 53.34 LMT of Single Super Phosphate (SSP). Total production in 2014-15 was 385.39 LMT, indicating an increase of only about 50 LMT over seven years.

In the case of Urea, the most consumed fertilizer, in 2019-20, the production was 244.58 LMT and the use was 336.96 LMT. In 2020-21, the country produced 246.05 LMT of urea and consumed 350.51 LMT. In 2021-22, the figure was 250.72 LMT and 341.72 LMT, respectively.

The Centre allocated ₹ 1.79 lakh crore as fertilizer subsidy under the Budget estimates for 2023-24. Out of this, for indigenous P&K Fertilizers, the subsidy amount was ₹25,500 crore and ₹18,500 crore for imported P&K Fertilizers. For indigenous Urea, the subsidy was ₹1,04,063.20 crore while the subsidy for imported urea was ₹ 31,000 crore.

#### **What is the situation in Ukraine and Gaza?**

Dr. Sitko said that he does not see any stability in fertilizer markets now due to the situations in Ukraine and Gaza. He is primarily bothered about the impact of the crisis on the oil prices, which will spill over to the by-products such as fertilizers. According to an answer provided in Lok Sabha, in 2018-19, 2019-20, and 2020-21, India's fertilizer imports were mostly from countries such as China, Russia, Saudi Arabia, UAE, Oman, Iran and Egypt. The worsening situation in West Asia and the ongoing conflict in Russia and Ukraine could impact imports from these regions.

#### **What can India do?**

Experts like Dr. Sitko have been asking India to enhance its fertilizer production capacity and to shift its farming systems to reduce dependence on imported fertilizers while making better use of the existing fertilizers. Suggestions such as using nano urea, shifting to natural farming, and enhancing the capacity of fertilizer factories have also been made to the government.



The Standing Committee of Parliament also pointed out the need for policy initiatives aimed at creating an environment that would facilitate investments in the public, co-operatives, and private sectors engaged in the manufacturing and marketing of fertilizers.

Commenting on the new investment policy, implemented in 2012, to streamline fertilizer production, the committee said it is satisfying to note that six new Urea plants have since been set up each having an annual production capacity of 12.7 LMT thereby adding Urea production capacity of 76.2 LMT per annum. "Now, 36 Urea manufacturing units are functioning, out of which, four new Urea Units viz Ramgundam, Gorakhpur, Sindri Unit of Fertilizers Corporation of India Limited and Barauni unit of Hindustan Fertiliser Corporation Limited, have been revived by setting up of new gas-based Greenfield units," the panel had noted.

### FARMERS IN M.P., INDIA'S 'SOYA BEAN STATE', BATTERED BY RAIN AND BETRAYED BY PRICES

Madhya Pradesh, known as India's 'soya bean State', produces the largest amount of the crop in the country, followed by Maharashtra. The two States grow nearly 85% of India's total production. Data from the Indian Institute of Soybean Research (IISR) show that in 2023, India produced 13.98 million tonnes of the crop.

#### The challenges

In Madhya Pradesh, various farmer outfits carried out protests through September for a minimum support price (MSP) of ₹6,000 per quintal. The demonstrations and tractor rallies at APMCs and in villages have continued, as farmer outfits say the MSP fixed by the government, at ₹4,892, does not even cover their costs. Last year, the MSP was ₹292 less.

Over the past two to three years, farmers say input costs have been high, government procurement late (this year it began on October 25), and weather irregular, making soya bean cultivation unprofitable.

#### India's low yield

Another factor that affects the income of India's soya bean farmers is productivity in terms of sowing area.

As per data from the Soybean Processors Association of India, a trade body based in Indore, India produced only 882 kg of soya bean per hectare, compared with 3,564 kg by Brazil in 2021-22. As per IISR data, India's soya bean productivity has averaged between 900 and 1,200 kg/hectare annually.

A document — 'Vision 2050'— published by IISR's Directorate of Soybean Research also flags concerns related to productivity, setting a target of achieving 2,500 kg/hectare by 2050.

Singh attributes the low yield to multiple factors such as weather patterns, duration of crop, various diseases caught by plants, and crop management.

He also says growing the same crop for a decade or two impacts soil health, which causes various diseases in plants.



Also, most Indian farmers prefer short-duration crops, as they grow two or three crops in a year. “The longer the duration, the higher the yield,” he says, adding that in those countries, farmers mostly grow only one crop every year due to severely low temperatures for many months.

### The crop’s potential

In India, soya bean is largely seen as an oilseed crop. In September this year, the Centre hiked the import duty on various edible oils, including crude soya bean oil from nil to 20%, and refined soya bean oil from 12.5% to 32.5%. The move was aimed at promoting the indigenous production of oilseed crops.

While the hike is yet to see any significant rise in the market price of the crop, Singh is hopeful of positive results in the near future. “The other significant use is of the cake that comes out after extracting the oil,” he says, adding that soymeal, locally called khali, is mainly fed to cattle. “It is also exported from India to various nations in West Asia and Europe to be fed to cattle,” he adds.

In India, only about 6-7% of the soya bean crop is used for food, as a source of vegetarian protein; it has all nine amino acids.

Soya bean was introduced in India from the U.S. in a joint research project involving University of Illinois, Chicago; G.B. Pant University of Agriculture and Technology, Uttarakhand; and University of Jabalpur (now Rani Durgavati Vishwavidyalaya) in Madhya Pradesh.

“The production boom began in Indore and surrounding areas,” Singh says, adding that the crop turned out to be hardy in the region as it survived the kharif season.

“We believe that the crop has a bright future in the country with the rising demand for high protein food and the (Central) government’s plans to develop India as a manufacturing hub for protein foods,” he adds.

## EXPRESS VIEW: DELAY IN PADDY PROCUREMENT SPEAKS OF A LARGER POLICY FAILURE

The slow pace of paddy procurement in Punjab and resultant farmer anger are a reflection of both short-term official incompetence and long-term policy failure. Last year, during the marketing months of October and November, government agencies bought 185.3 lakh tonnes (lt) of paddy. This time, they have purchased just 71.6 lt so far, mainly due to lack of storage space for the new crop. That, in turn, has been because of 119 lt of rice, out of the total 124.1 lt milled grain from last year’s procured paddy, still remaining in Punjab as on October 1. With the Food Corporation of India (FCI) not moving this rice out of the state, Punjab’s warehouses have little capacity to accommodate fresh grain. Millers, too, are hesitant to lift the paddy brought by farmers that they process on behalf of state agencies. They aren’t sure the latter would take timely delivery of their custom-milled rice.

The most immediate sufferers of tardy procurement — as has also been reported from Haryana — are farmers. Heaps of un-lifted grain lying in the wholesale mandis has prompted them to also slow down harvesting of their already-ripened paddy in the fields. Union Food Minister Pralhad Joshi has assured farmers that the Centre “will procure each and every grain” from them “by November-end”. But the more the procurement gets extended, the narrower would be the window for sowing the next wheat crop. Given that farmers need to sow before mid-November in order to harvest by early-April before temperatures start soaring, they may now take greater recourse to



stubble burning to clear their fields. Delayed paddy procurement could, then, cause collateral damage to air quality in north India, including the national capital.

But it isn't just poor short-term planning — someone has to answer for the FCI's inability to move out last year's rice procured from Punjab and Haryana — that is to blame. Equally, if not more, serious is the policy failure to wean the two states away from paddy cultivation. Unlike wheat, there is no dearth of other states — whether in the north, south, east or central India — that can grow rice enough to meet the country's consumption requirement, and also in a more environmentally-sustainable way. The fact that the paddy area in Punjab and Haryana touched a record 32.4 lakh and 16.4 lakh hectares respectively this time only testifies to the absence of political will to address the real problem. India is today producing too much rice, which is borne out by the all-time-high opening stocks of 386.8 lt in government warehouses as on October 1. The solution to this problem has to start from Punjab and Haryana. Creating more storage space is a short-term expedient at best.

## ALL ABOUT C295 AIRCRAFT, WHOSE MANUFACTURING PLANT WAS INAUGURATED BY PM MODI

Prime Minister Narendra Modi on Monday (October 28) inaugurated a plant in Vadodara, where Tata Advanced Systems Ltd (TASL) will manufacture the C-295 aircraft for the Indian Air Force (IAF). Spanish Prime Minister Pedro Sanchez was also present in Gujarat, with the two leaders having laid the foundation stone of the Final Assembly Line (FAL) plant in October 2022.

The facility will be the first private sector final assembly line for military aircraft in India, according to a statement from the Prime Minister's Office. Here is what to know about the C295 and its significance for the Indian military.

### **Where is the C295 produced and by whom?**

The C295 was originally produced by a Spanish aircraft manufacturer named Construcciones Aeronáuticas SA. This company is now part of Airbus and the aircraft's manufacturing takes place at Airbus's plant in Spain.

In September 2021, India signed a Rs 21,935 crore deal with Airbus Defence and Space to procure 56 C295 aircraft to replace the IAF's ageing Avro-748 planes, which entered service in the early 1960s.

Under the agreement, Airbus will deliver the first 16 aircraft in 'fly-away' condition from its final assembly line in Seville, Spain within four years. The subsequent 40 aircraft will be manufactured by TASL in India as part of an industrial partnership between the two companies.

The 16 fly-away aircraft will be delivered between September 2023 and August 2025. The first Made-in-India aircraft will be rolled out of the manufacturing facility in September 2026 and the remaining 39 will have to be produced by August 2031.

After the completion of the delivery, Airbus Defence and Space will be allowed to sell the aircraft manufactured in India to civil operators and export to countries which are cleared by the Government of India.



### **What are the technical specifications of the C295 aircraft?**

The C295MW is a transport aircraft with a 5 to 10-tonne capacity and a maximum speed of 480 kmph. It has a rear ramp door for quick reaction and para-dropping of troops and cargo. Short take-off and landing from semi-prepared surfaces are some other features.

The technical specifications released by Airbus say that the aircraft has a cabin dimension of 12.7 metres or 41 feet and eight inches. The company claims this aircraft has the longest unobstructed cabin in its class and can accommodate 71 seats. The company also claims that C295 can carry more cargo than its competitors with direct off-loading through the rear ramp.

Defence Minister Rajnath Singh said in a post on X last year that the C-295's induction "will bolster medium lift tactical capability of the IAF." At present, the IAF has a Soviet-origin AN-32 aircraft fleet to haul a limited number of troops and supplies over short distances. However, these aircraft were inducted in the 1980s and many are on the verge of being phased out due to the wear and tear. The C-295 will help bridge the gap.

All 56 aircraft will be fitted with an indigenous electronic warfare suite to be developed by Bharat Electronics Ltd and Bharat Dynamics Limited. Former Defence Secretary Ajay Kumar has said the indigenous content in the plane will be the highest ever in India, and that 96 per cent of the work that Airbus does in Spain to produce the plane will be done at the manufacturing unit in Vadodara.

### **In which terrains have the C295 operated across the world?**

As per Airbus, the C295 operates in the Brazilian jungles and Columbian mountains in South America, the deserts of Algeria and Jordan in the Middle East and the cold climates of Poland and Finland in Europe. The aircraft has also flown in military operations in Chad, Iraq and Afghanistan.

### **What are the roles that the C295 can perform?**

As a tactical transport aircraft, the C295 can carry troops and logistical supplies from main airfields to forward operating airfields of the country. It can also operate on short unprepared airstrips as it is capable of Short Take-off and Landing (STOL). It can operate from short airstrips just 2,200 feet long and can fly low-level operations for tactical missions flying at a low speed of 110 knots, says Airbus.

The aircraft can additionally be used for casualty or medical evacuation, performing special missions, disaster response and maritime patrol duties.

**LIFE & SCIENCE****FIRST 'BLACK HOLE TRIPLE' SYSTEM DISCOVERED: WHAT DOES IT MEAN?**

A new study says scientists have discovered a “black hole triple” in space for the first time. The system comprises a black hole at its centre, currently in the process of consuming a small star spiralling very close to it. There is also a second star, which appears to be circling the black hole but is actually far away.

- The discovery of the system, located about 8,000 light years away from Earth (one light year is the distance light travels in a year, 9.5 trillion kilometre), has raised questions about how black holes are formed.
- A black hole is a region in space where the pull of gravity is so strong that no matter or light can escape it. Astronomers believe most black holes are formed after massive stars explode at the end of their lives — known as a supernova. However, the triple system suggests a gentler process.
- Many black holes discovered until now have been part of binary systems, consisting of a black hole and a secondary object (such as a star or another black hole). But the black hole triple not only has one star which orbits the black hole about every 6.5 days, but also a more far-off star which orbits it every 70,000 years.
- Situated in the constellation of Cygnus, the system features one of the oldest known black holes, the V404 Cygni, which is nine times as big as the Sun in our solar system.
- Burdge and his colleagues have proposed that V404 Cygni has two stars around it as the black hole did not arise from a supernova, which typically kicks away outer stars in the explosion.
- Instead, it was formed through another process called “direct collapse”, where the star caves in after expending all its fuel, but does not explode.
- However, the black hole triple will not have three members forever, as V404 Cygni is consuming the nearer star. This suggests that some already discovered binary systems could have been triple systems at some point, with the black hole later devouring one of its members.

**Do You Know:**

- A nova explosion is the dramatic instance of a star exploding as it interacts with another, nearby star. It's a one of many, repeated moments during the long, slow, death of two neighboring stars in the same system.
- A supernova is the final explosion that utterly destroys stars. In a nova event, the dwarf star remains intact, which is why nova events typically repeat themselves.
- The explosion of a nova blasts away star matter in a blinding light, but it won't look like a star explosion you see in the movies — thankfully, we're too far away to see this level of detail.
- To the naked eye, the nova will instead look like a new star has appeared in the sky. People with high-powered telescopes will be able to see the nova's brightly coloured luminosity in some detail.



## CHINA SENDS NEW CREW TO ITS TIANGONG SPACE STATION

A Chinese spaceship carrying a three-person crew docked with its orbiting space station Tuesday as the country seeks to expand its exploration of outer space in competition with the U.S., even as it looks for cooperation from other nations.

The team of two men and one woman will replace astronauts who have lived on the Tiangong space station for the last six months, conducting a variety of experiments and maintaining the structure.

The Shenzhou-19 spaceship carrying the trio blasted off from the Jiuquan Satellite Launch Center in northwest China at 4:27 am local time atop a Long March-2F rocket, the backbone of China's crewed space missions.

China built its own space station after being excluded from the International Space Station, mainly because of U.S. concerns over the control of the People's Liberation Army over the space programme. China's moon programme is part of a growing rivalry with the U.S. and others, including Japan and India.

Besides putting a space station into orbit, the Chinese space agency has landed an explorer on Mars. It aims to put a person on the moon before 2030, which would make China the second nation after the U.S. to do so. It also plans to build a research station on the moon and has already transferred rock and soil samples from the moon in a first for any nation in decades and placed a rover on the little-explored far side of the moon in a global first.

The U.S. still leads in space exploration and plans to land astronauts on the moon for the first time in more than 50 years, though NASA pushed the target date back to 2026 earlier this year.

The new Chinese crew will perform spacewalks and install new equipment to protect the station from space debris.

## HUMAN FACTOR

### Is there any evidence of animal evolution in response to environmental changes caused by humans?

A new study has found that New Zealand's native stoneflies have changed colour in response to human-driven environmental changes. Researchers from the University of Otago provide arguably the world's most clear-cut case of animal evolution in response to change made by humans. They found the stonefly taking a different colour due to deforestation. Insects and small animals have evolved to achieve warning colours that mimic those of a poisonous forest species to escape from predators. The researchers found that stoneflies that mimic a related, toxic species repeatedly changed colour in response to forest loss and shifts in predation pressure. "The removal of forests since humans arrived has removed the poisonous species. As a result, in deforested regions the mimicking species has abandoned this strategy — as there is nothing to mimic — instead evolving into a different colour," Dr. Jon Waters, a co-author of the study said in a release.

## BEING OLD AND ALONE IS OKAY

What does it mean to get older? Creaky joints, achy bones and the return of the urge to nap, last experienced in childhood. For many, it also means a growing impatience with the company of

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



others — the stereotype of the cranky old person yelling at kids to “get off” his lawn has some basis in reality. Yet, this last characteristic, it seems, is not a uniquely human quirk. Much like people, several species of animals, birds and insects tend to keep to themselves as they age. According to a series of papers published in a special issue of the journal, *Philosophical Transactions of the Royal Society*, this is largely because it helps them to avoid catching infections and falling sick.

For humans, however, isolation does not have quite the same effects. There’s enough evidence to show that the impact of loneliness on human beings — who have evolved to thrive in the company of others — especially at an advanced age, can be debilitating, mentally and physically. In his advisory about the “epidemic of loneliness” issued earlier this year, US Surgeon General Vivek Murthy warned that lack of social connections could increase the risk of premature death by 26 per cent, besides increasing susceptibility to anxiety, depression and dementia.

All of this, of course, makes the prospect of spending one’s sunset years in one’s own company seem dire. But this is where one can take heart from animal behaviour: Being alone may not be unnatural. Indeed, for those who choose to be on their own in their dotage — not a small number — and who have long fought the mischaracterisation of solitude as “loneliness” and introversion as “sadness”, the example of ageing animals who shun the company of others may be something to live by. It turns out that even when they’re all by themselves, they’re not lonely.

## LIDAR

Scientists have detected a lost Mayan city, hidden for centuries by the dense Mexican jungle, using LiDAR.

- LiDAR instrumentation comprises a laser, a scanner, and a GPS receiver. The rapidly firing laser travels to the ground where it hits vegetation, building, and various topographic features. This light is reflected or scattered, and recorded by the LiDAR sensor.
- The system calculates the light pulses’ two-way travel time to arrive at the distance between the terrain and the sensor. It processes this information with Global Positioning System (GPS) and Inertial Measurement System (IMS) data, to create an elevation map of Earth.
- LiDAR data is initially collected as a “point cloud” of all individual points reflected from everything on the surface, including structures and vegetation. But the specifics of how much light energy was returned to the sensor allows further identification of different features, such as vegetation, buildings, etc. For example, tree canopies, however dense they may be, allow some light to pass through and hit the ground.
- The LiDAR data can be further refined to produce what scientists call a “bare earth” Digital Elevation Model, in which structures and vegetation are stripped away.

### Do You Know:

- LiDAR, or Light Detection and Ranging, is a remote sensing technology that uses light in the form of a pulsed laser to measure ranges (or variable distances) of a sensor, usually mounted aboard an aircraft, to Earth’s surface. LiDAR data can be used to create high-resolution 3-D models of ground elevation with a vertical accuracy of upto 10 cm, according to the US Geological Survey.





- LiDAR is used to generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. This is obviously very useful information for geographers, policy makers, conservationists, and engineers. In recent years, however, LiDAR has also shown potential as a tool of archaeological discovery.
- But LiDAR allows researchers to study much larger swathes of land quickly in the comfort of a home or lab. Auld-Thomas used publicly available LiDAR data taken for a forest monitoring project in 2013 to discover the city he named Valeriana in Mexico's Campeche region.

#### HOW A TARDIGRADE RESISTS HIGH LEVELS OF RADIATION, IMPLICATIONS FOR HUMANS

A team of researchers has identified the genetic mechanisms that help a newly discovered species of tardigrades (*Hypsibius henanensis*) withstand high levels of radiation. The species comprises thousands of genes, which become more active when exposed to radiation. They protect the microscopic animals' DNA from damage and repair breaks, according to the scientists.

Their study, 'Multi-omics landscape and molecular basis of radiation tolerance in a tardigrade', was published in the journal *Science* last week. The scientists involved in the research are affiliated with several institutions in China.

The findings could one day be harnessed to help protect astronauts from radiation during space missions, clean up nuclear pollution or improve cancer treatment, according to a report in *Nature*.

"This discovery may help improve the stress tolerance of human cells, benefiting patients undergoing radiation therapy."

The team of scientists sequenced the genome of this new species and revealed that it had 14,701 genes, 30% of which were unique to tardigrades. They then exposed *Hypsibius henanensis* to radiation doses of gamma rays that were far beyond what would be survivable for humans, the *Nature* report said.

#### **What did the study find?**

The scientists discovered 2,801 of the genes in *Hypsibius henanensis* that were involved in DNA repair. More specifically, they found three factors that help this species survive radiation.

The first was its ability to quickly repair double-strand breaks in DNA due to radiation exposure, by using a protein called TRID1. "The second factor involved a gene that was switched on during exposure to radiation, resulting in the generation of two proteins that are known to be important for mitochondrial synthesis... in tardigrades, it appears they also help with DNA repair," according to a report by *phys.org*.

The third one was *Hypsibius henanensis*'s ability to produce different types of antioxidant pigments called betalains. These pigments can mop up some of the harmful reactive chemicals that radiation causes to form inside cells, the *Nature* report said.

Notably, the researchers tested one of the tardigrade's betalains on human cells and found it significantly improved their survival rate after radiation exposure.



## WHAT IS DANA, THE WEATHER PATTERN WHICH CAUSED FLASH FLOODS IN SPAIN?

Millions have been affected in southern and eastern Spain due to torrential rain, which began on Monday (October 28) night and has submerged villages and towns, and cut off roads. Flash floods caused by the immense deluge have led to the death of at least 64 people in the eastern Spanish region of Valencia, authorities said on Wednesday (October 30).

In some areas, more than a month's worth of rain fell in a day. In Andalusia — the southernmost region of Spain — it was four times the amount of rain that usually falls in all of October, according to a report by The New York Times. The country's meteorological agency said between 150 and 200 litres per square meter, or roughly 40 to 50 gallons per square yard, fell in some areas over a two-hour period, the report added. The rain is expected to continue until at least Thursday.

The primary cause of the intense rain is likely an annual weather phenomenon known as a "gota fría," or cold drop. It is also sometimes called a "DANA," the acronym for "depresión aislada en niveles altos," or isolated depression at high altitudes.

### **What is DANA or cold drop?**

DANA or cold drop takes place when cold air descends over the warm waters of the Mediterranean Sea. This results in atmospheric instability, causing hotter, moist air on the surface of the sea to rise quickly, leading to the formation of dense, towering cumulonimbus clouds in a matter of hours. These clouds then dump heavy rain in parts of Spain.

The weather pattern's occurrence is related to the polar jet stream — a fast-moving wind current at high levels of the troposphere (the lowest layer of Earth's atmosphere) which circulates from west to east and separates the cold polar air from the warm tropical air.

Often, a pocket of cold air gets separated from the polar jet stream and collides with the warmer air over the Mediterranean Sea, which results in DANA.

### **Is DANA or cold drop becoming more intense?**

The phenomenon is a common occurrence in Spain and usually coincides with the onset of autumn and spring in the western Mediterranean.

However, experts suggest that cold drops have become more frequent and intense in recent years. Also, the phenomenon has also become more geographically spread.

Rubén del Campo, a spokesman at Spain's meteorological agency told the NYT that the rains caused by a cold drop no longer just hit the coast, but also cities like Madrid, "where it is not usual to have this type of abundant rainfall."

This is happening partly because of soaring global temperatures — warmer air can retain more moisture which, in turn, results in more intense rainfall. The rise in sea surface temperatures of the Mediterranean Sea has also exacerbated the situation. In August, the sea touched its highest-ever recorded temperature.

Miriam Zaitogui Pérez, the Spanish director of the European Climate Foundation, told the NYT, "This [cold drop] is created by cold air interacting with a hotter surface, and the hotter surface is becoming hotter".

**Do You Know:**

- Excessive or continuous rainfall over a period of days, or during particular seasons, can lead to stagnation of water and cause flooding. Flash floods refer to such a situation, but occurring in a much shorter span of time, and are highly localised. For instance, the US's meteorological agency, the National Weather Service, says flash floods are caused when rainfall creates flooding in less than 6 hours. It adds that flash floods can also be caused by factors apart from rainfall, like when water goes beyond the levels of a dam.
- In India, flash floods are often associated with cloudbursts – sudden, intense rainfall in a short period of time. Himalayan states further face the challenge of overflowing glacial lakes, formed due to the melting of glaciers, and their numbers have been increasing in the last few years.
- Frequently, flash floods are accompanied by landslides, which are sudden movements of rock, boulders, earth or debris down a slope. It is common in mountainous terrains, where there are conditions created for it in terms of the soil, rock, geology and slope. Natural causes that trigger landslides include heavy rainfall, earthquakes, snow melting and undercutting of slopes due to flooding.
- Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly. They can occur in urban areas located near small rivers, since hard surfaces such as roads and concrete do not allow the water to absorb into the ground.
- Flash floods may in the future, begin to take place after wildfires that have been taking place more frequently. This is because wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.

**CARBON CREDIT: THE RIGHT TO EMIT****WHAT IS IT?**

Carbon credits are an important new instrument of climate finance.

The green-coloured piece of paper printed by the Reserve Bank of India and circulated by the government is worth 20 rupees. The person who possesses it can buy a packet of biscuits by transferring that value to the seller. There are different ways to acquire such pieces of paper. For example, people do different kinds of jobs to earn money. Carbon credits are similar. Just like possessing the green note means you possess 20 rupees of value, possessing one carbon credit gives you a licence to emit 1,000 kg of carbon dioxide (or equivalent).

You can earn a carbon credit by removing 1,000 kg of carbon dioxide from the environment and submitting the proof to a government or suitable certifying agency. Once they sign off, you can sell your credit to potential buyers. Governments around the world have decided which types of work can earn carbon credits, who can certify them, and who can buy them. Such projects include most renewable energy installations, certain forests, and carbon capture facilities. The Paris Agreement set up an international carbon market as part of helping countries meet their emissions targets.

An important problem with carbon credits is that the certifying agencies struggle to verify whether sellers have actually removed 1,000 kg of carbon dioxide. How countries can fix this problem is an important agenda item at the COP29 climate talks in Baku in November.



## GREENHOUSE GAS LEVELS HIT A NEW RECORD HIGH IN 2023: WORLD METEOROLOGICAL ORGANIZATION

Planet-warming greenhouse gas (GHG) levels surged to a new record in 2023, with annual mean levels of carbon dioxide (CO<sub>2</sub>), the most important GHG in the atmosphere, rising by 2.3 parts per million (PPM) between 2022 and 2023, the World Meteorological Organization said Monday. This was the 12th consecutive year when the annual mean CO<sub>2</sub> rose by over 2 PPM.

The globally averaged surface concentrations of carbon dioxide, methane, and nitrous oxide GHG reached new highs in 2023, with CO<sub>2</sub> at 420 ppm. According to the WMO, the last time the earth had a similar CO<sub>2</sub> concentration was 3-5 million years ago, when temperatures were 2-3°C higher and sea levels were 10-20 metres higher than they are now.

The increase in CO<sub>2</sub> between 2022 and 2023, WMO said, was slightly higher than the 2021-2022 period but slightly lower than the average annual growth rate over the last decade, and was partly caused by natural variability. CO<sub>2</sub> emissions caused by large vegetation fires and a possible reduction in carbon absorption by forests combined with stubbornly high fossil fuel CO<sub>2</sub> emissions from human and industrial activities drove the CO<sub>2</sub> increase in 2023, according to WMO's annual Greenhouse Gas Bulletin.

The El Nino weather phenomenon, which leads to warmer weather and reduced rainfall, especially in South Asia, caused record high temperatures, drier vegetation and wildfires, thus releasing more GHGs into the earth. "During El Nino years, greenhouse gas levels tend to rise because drier vegetation and forest fires reduce the efficiency of land carbon sinks," said the WMO, a specialised agency of the United Nations whose mandate covers weather, climate and water resources.

WMO scientists warned that the rising CO<sub>2</sub> concentration and its impact on climate change could cause the natural ecosystems to become sources of greenhouse gases. "The bulletin warns that we face a potential vicious cycle. Natural climate variability plays a big role in carbon cycle. But in the near future, climate change itself could cause ecosystems to become larger sources of greenhouse gases. Wildfires could release more carbon emissions into the atmosphere, whilst the warmer ocean might absorb less CO<sub>2</sub>," said WMO deputy secretary-general Ko Barrett.

She added, "Consequently, more CO<sub>2</sub> could stay in the atmosphere to accelerate global warming. These climate feedbacks are critical concerns to human society."

From 1990 to 2023, radiative forcing—the warming effect on our climate—by long-lived greenhouse gases increased by 51.5 per cent, with CO<sub>2</sub> accounting for about 81 per cent of this increase, according to the National Oceanic and Atmospheric Administration Annual Greenhouse Gas Index cited in the WMO Bulletin.

The WMO said that given the extremely long life of CO<sub>2</sub> in the atmosphere, even if emissions reduce rapidly due to net zero targets, the observed temperature levels will persist for several decades.

It also pointed out that climate feedback concerns were not limited to CO<sub>2</sub> alone. Methane present in the earth's atmosphere saw the largest three-year increase between 2020 and 2022. Observations and model simulations pointed to a rise in methane emissions from natural wetlands in response to warmer temperatures and particularly wetter land conditions during the 2020-2022 La Nina conditions.



## POWER THAT HASN'T PEAKED

Last month, the UK's last coal-based generation plant at Ratcliffe-on-Soar (Nottinghamshire) was taken off the grid. The country's first coal plant was set up more than 140 years ago and the Ratcliffe-on-Soar plant had been in operation since 1967. The pace at which coal-based generation has been brought down in the UK is phenomenal.

- The UK government has been pursuing a policy of closing down coal mines since the 1990s for reasons other than climate change — mainly political. In 2015, the government decided to completely phase out all coal-based plants by 2025 — the deadline was later advanced to October 2024.
- To get rid of coal-based generation, the government relied on market drivers and regulatory interventions. Practically all governments in the UK have increased the cost of carbon dioxide emissions and the EU made emission norms more strict.
- The government also introduced mandatory use of carbon capture and storage for all new coal-based plants. These measures ensured that coal-based generation became increasingly more expensive and unprofitable. Developers decided to move out to other pastures.
- The UK imports a fair amount of electricity and imports have gone up considerably this year. In the second quarter of 2024, it imported 20 per cent of its electricity demand. The UK was not dependent on domestic coal-based generators and the country could easily fill the gap through imports.
- The UK has made some progress in the decarbonisation of the power sector though it hasn't got rid of carbon footprints completely. It is highly dependent on gas which is half as dirty as coal.

### Do You Know:

- The power demand in India is surging. In 2022, the requirement grew about 8% — or at nearly double the pace of the Asia Pacific region, around more than 149.7 terawatt-hours (TWh) in comparison to the previous year, according to a recent report by Reuters.
- The nuclear sector contributes less than 3 per cent to the electricity mix. Growth in renewable generation may look spectacular but its far less than what is required to meet the demand in 2030.
- The primary reason for this increase is higher economic activity. Industrial and commercial activity are among the biggest consumers of energy in the country. Homes account for a fourth of India's power use and agriculture for more than a sixth in recent years, the report said.
- India will witness the largest energy demand growth of any country or region in the world over the next 30 years, according to the latest World Energy Outlook by the International Energy Agency (IEA). It also added that the country's requirement for electricity for running household air conditioners is estimated to expand nine-fold by 2050 and will exceed total power consumption in the whole of Africa today.
- The staggering levels of power demand have become a formidable challenge for India. As a result, it has doubled down on its coal production. It spiked from 778 million tons in 2021-22 to 893 million tons in 2022-23, a 14% growth, according to the coal ministry. India has also set a target of 1.31 billion tonnes of coal production for 2024-25 and aims to increase it to 1.5 billion tons by 2030.



## HEALTH RISK FROM EXCESSIVE HEAT RISING IN INDIA: LANCET REPORT

Targeted interventions for vulnerable populations and changes in working hours, particularly for those working outdoors, are some of the essential measures that India needs to take to arrest the increasing risk of heat-related health impacts on its people, says a new Lancet report on climate change and health.

- The report, an annual publication that tracks climate impacts on human health at the global level, has pointed out that health-threatening temperatures are getting increasingly prolonged in India. In 2023, every person in the country was exposed to at least 2,400 hours of heat, equivalent to 100 days, that could have resulted in moderate to serious heat-related diseases, says the report.
- The 2024 report of the Lancet Countdown on health and climate change notes that 10 of the 15 indicators it uses for monitoring climate change-related health hazards globally have reached “concerning new records”.
- In India, besides the risk of heat-related diseases, the report has flagged potential health impacts from rising instances of flooding, increasing vulnerability from infectious diseases, and high levels of air pollution, all of which are getting exacerbated due to climate change.
- The biggest risk, according to the report, is from heat because of which about 181 billion potential labour hours were lost last year, an increase of 50% from the 1990-1999 annual average.
- The report says that about 38% of the nearly 1.6 million deaths that were attributable to air pollution in 2021 could be blamed on high usage of fossil fuels. It notes the rising share of renewable energy in India’s energy mix, but says more needs to be done.

### Do You Know:

- Climate change is the greatest global health threat facing the world in the 21st century, but it is also the greatest opportunity to redefine the social and environmental determinants of health. In 2015, countries committed to limit global warming to “well below 2°C” as part of the landmark Paris Agreement to limit the harm caused by climate change.
- Published annually, the Lancet Countdown is an international, multidisciplinary collaboration, dedicated to monitoring the evolving health profile of climate change, and providing an independent assessment of the delivery of commitments made by governments worldwide under the Paris Agreement.
- The Lancet Countdown tracks 53 indicators across five key domains: climate change impacts, exposures, and vulnerability; adaptation, planning, and resilience for health; mitigation actions and health co-benefits; economics and finance; and public and political engagement.
- The Lancet Countdown was established following the 2015 Lancet Commission on Health and Climate Change. The annual Countdown report is published by The Lancet, following independent peer review. Throughout the year, the Lancet family of journals publish additional papers offering country-level analyses related to the Countdown indicators, as well as numerous other landmark papers on climate change and health. The Lancet is also a member of the UK Health Alliance on Climate Change.



## WHAT DOES H5N1 VIRUS IN CATTLE, HUMANS PORTEND?

The emergence of a new clade of Avian Influenza H5N1 (2.3.4.4b) in late 2020 has led to a swift and widespread global outbreak, carried by migratory birds. Since then, the highly contagious clade has spread quickly across the world causing widespread mortality among birds. The outbreak is estimated to have killed millions of birds and the virus has infected over 200 mammalian species including humans.

A surprising twist occurred in March 2024, when avian influenza was detected in cattle in the U.S. Farmers had noticed a drop in milk production as early as January, but it was not until later that the U.S. Department of Agriculture (USDA) confirmed avian influenza H5N1 as the cause. The initial outbreak, caused by a sublineage that was identified in Texas, spread rapidly, impacting 100 herds by mid-June. It has since expanded to over 330 herds across 14 states. A preprint posted in May, which extensively analysed early genome sequences from the outbreak, suggested that the sublineage of the virus (B3.13) was likely introduced to cattle through poultry, possibly in late last year.

### Remaining undetected

It remained undetected for nearly four months before being confirmed by the USDA. Recent studies in experimental settings suggest that the virus can infect cattle when administered through both aerosol and intramammary routes. With its continued spread among mammals, the outbreak shows no signs of slowing down, raising significant concerns. If the virus becomes endemic in mammals, it could create numerous opportunities for the virus to evolve and optimise its transmission.

Human infections from the outbreak in cattle were first noted as early as April 2024 in Texas. Since then, 26 cases have been reported in California, Colorado, Michigan, Missouri, and Texas. Among them, 15 individuals had direct exposure to infected cattle, while 10 had contact with infected poultry. However, a case reported in Missouri in September had no known exposure to infected animals, and this remains a puzzle. The CDC confirmed that the Missouri patient had avian influenza A(H5N1) based on blood test results. Serology tests on close contacts did not indicate further human transmission. A household contact of the patient showed weak signs of potential exposure but did not meet the WHO criteria for confirmed infection.

There are concerns that the reported numbers may represent only a small portion of the actual cases, as human testing for the virus is not widespread, and access to tests remains limited. However, early sero-surveillance studies on limited numbers of exposed individuals suggest that while the overall prevalence of H5N1 infections has been low, the risk increases with close and prolonged exposure to infected animals or contaminated environments.

According to the CDC, the risk of infection with avian influenza H5N1 for humans not directly working with cattle or poultry remains low. However, we are still navigating uncharted territory with this virus. So far, there has been no documented human-to-human transmission, and genome sequences do not show any signs of the virus adapting to spread between humans.

Despite the current calm, caution is necessary as spillover events in both cattle and humans continue to rise and the virus continues to evolve and adapt.

The wastewater surveillance programme in the US supplements conventional surveillance methods to provide early warnings. Genomic surveillance could enable timely interventions,



enhance disease monitoring, and improve preparedness by identifying potential risks early, especially if the virus evolves to allow efficient human-to-human transmission.

## STUDY OFFERS CLUES TO WHY COVID-19 VACCINE PROTECTION WANES QUICKLY

The ideal vaccine offers nearly complete protection against infection and mild disease in just one dose. It is simple to administer and doesn't have any adverse effects. The protective immunity lasts a lifetime.

### **Are these expectations too idealistic?**

In practical scenarios, no single vaccine provides such advantages. The key challenges vaccine developers face are the vaccines' durability, the lack of immune correlates of protection, and the inability to protect against infection and transmission. But the greatest challenge among these three bottlenecks is the inability of vaccines to confer long-lasting protection.

Recently, the authors reviewed 34 licensed vaccines for the duration of protection against different infectious diseases. Only five offer long-lasting protection.

### **Vaccines and lasting protection**

The immunity that follows an infection — natural or vaccine-induced — is mainly the result of the body generating antibodies. A specific type of immune cell known as a plasma cell, which comes from B-cells in the lymph nodes, secretes these antibodies.

Not all B-cells and plasma cells are of the same type. Most of them have a short life span: they produce antibodies for a few weeks and die. As a result, the concentration of antibodies in the body declines after a few weeks. But in the lymph nodes, a key lymphatic region, a germinal centre (GC), undergoes a long selection and maturation process known as affinity maturation to produce memory B-cells. GCs are the engines of antibody evolution and the mainstay of immune cells that provide lasting immunity. The name memory B-cells refers to these cells' capacity to memorise the antigen's characteristics over an extended period of time. When the antigen or microbe reenters the body, the memory B-cells swiftly identify it and start producing antigen-specific plasma cells. This rapidly boosts the antibody concentration and protects the individual against the disease.

Some plasma cells, known as long-lasting plasma cells (LLPCs), also migrate to the bone marrow and survive for an extended duration, promoting the production of antibodies in this time. A vaccine's ability to confer long-term protection thus depends on its ability to induce the production of LLPCs. The goal of all vaccine developers is for their vaccines to generate these cells in the bone marrow.

But while most vaccines generate memory B-cells, not all of them turn into LLPCs. Special signals from the B-cell receptors are required for this to happen. Cross-linking between these receptors (called BCR cross-linking) and the antigen present in the vaccine triggers the release of T-cells. Thus the type of antigen in the vaccine, which is also capable of triggering cross-linking, dictates the creation of LLPCs.