

# CURRENT AFFAIRS for UPSC

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2ND TO 8TH JUNE 2024

DreamIAS



## INTERNATIONAL

### CHANGE AND CONTINUITY

When Andrés Manuel López Obrador, the leftist nationalist and leader of the Movement of National Rejuvenation (Morena), became the President of Mexico in 2018, many warned that the Latin American country was on the path to become another Venezuela. But Mr. Obrador proved his critics wrong using populism with fiscal responsibility and pushing Mexico's polity, which was dominated by the pro-American, centre-right Institutional Revolutionary Party (PRI) for over seven decades, towards the Left. The Morena's surge helped Claudia Sheinbaum, the 61-year-old climate scientist who was endorsed by Mr. Obrador, make history last week as she was elected the first woman President of Mexico. The former Mexico City Mayor, known for her tough measures in tackling violent crimes, won 58.6% votes, while her rival, Xóchitl Gálvez, the joint candidate of three opposition parties, secured 28.4%. Morena also won a two-thirds majority in Parliament, which makes Ms. Sheinbaum the first leader in over 30 years who can push constitutional changes — a long-standing promise of Mr. Obrador — through Congress without the opposition's support. Ms. Sheinbaum, who campaigned on the promise of wealth distribution, tackling crime and building a stronger economy, said she will stay true to Mr. Obrador's legacy.

Mr. Obrador's victory in 2018 marked a paradigm shift in Mexico's politics. He promised to end widespread corruption and launch a massive public spending programme. But unlike several other populists in the region, he adopted a pragmatic approach seeking to bring in gradual changes. He rolled out cash handouts of about \$350 for the elderly and monthly scholarships of about \$50 for students, besides launching reforestation grants in rural areas, without jeopardising the country's economic stability. The Mexican peso rose to its strongest levels in almost a decade and investments flowed in. While economic expansion averaged at about 1%, unemployment fell to 2.8%, one of the country's all-time lows. Mr. Obrador remained largely popular despite criticisms of his failing to tackle violent crime and his intolerance towards dissent. Ms. Sheinbaum should be mindful of the criticisms her predecessor faced. There are concerns that the Morena's supermajority would lead to constitutional amendments, doing away with some checks and balances on executive power. The new President should bring the fiscal deficit, which ballooned in Mr. Obrador's last year in office, under check while continuing his social security measures. A bigger challenge would be to crack down on gangs that control drug trafficking to the U.S. Ms. Sheinbaum should use her strong mandate to offer a social contract that improves on Mr. Obrador's welfarism with a stronger emphasis on the Morena's social democracy.

### IS A FUTURE PALESTINE STATE POSSIBLE?

#### The story so far:

Hamas's October 7, 2023 attack in Israel and the latter's continuing war on Gaza have brought the Palestine question back to the fore of West Asia. As the war has destroyed much of Gaza and killed 36,000 of its people, the world has also seen more countries voicing strong support for a future Palestine state. Recently, three European countries, Spain, Ireland and Norway, recognised the Palestine state. Arab countries, including Saudi Arabia and Jordan, say there wouldn't be lasting peace in the region unless the Palestine question is resolved. An internationally recognised solution to the crisis is what's called the two-state solution.



### **What's the two-state solution?**

The short answer is simple: divide historical Palestine, the land between the Jordan River on the east and the Mediterranean Sea in the west, into an Arab state and a Jewish state. But the long answer is complicated. Israel, a Jewish state, was created in Palestine in 1948. But a Palestine state is not yet a reality. Palestinian territories have been under Israeli occupation since 1967. So, a two-state solution today means the creation of a legitimate, sovereign Palestine state, which enjoys the full rights like any other nation state under the UN Charter.

### **What are the origins?**

The roots of the two-state solution go back to the 1930s when the British ruled over Palestine. In 1936, the British government appointed a commission headed by Lord William Robert Peel (known as the Peel Commission) to investigate the causes of Arab-Jewish clashes in Palestine. A year later, the commission proposed a partition of Palestine into a Jewish and an Arab state. At that time, Jews accounted for some 28% of Palestine's population. According to the Peel Commission proposal, the West Bank, Gaza and Negev desert would make up the Arab state, while much of Palestine's coast and the fertile Galilee region would be part of the Jewish state. Arabs rejected the proposal.

After the Second World War, the UN Special Commission on Palestine (UNSCOP) put forward another partition plan. It proposed that Palestine be divided into three territories — a Jewish state, an Arab state and an international territory (Jerusalem). Jews, who made up roughly 32% of Palestine's population, were to have 56% of the Palestine land as per the UNSCOP plan. The partition plan was adopted in the UN General Assembly (Resolution 181). Arabs rejected the plan (India voted against it), while the Zionist leadership of Israeli settlers in Palestine accepted it. And on May 14, 1948. Zionists unilaterally declared the state of Israel. This triggered the first Arab-Israeli war. And by the time an armistice agreement was achieved in 1949, Israel had captured some 22% more territories than what the UN had proposed.

### **How did it get international legitimacy?**

In the 1967 Six-Day War, Israel captured the West Bank and East Jerusalem from Jordan, the Gaza Strip and the Sinai Peninsula from Egypt and the Golan Heights from Syria (Israel continues to control all territories except the Sinai which it returned to Egypt after the 1978 Camp David Accords). Palestine nationalism emerged stronger in the 1960s, under the leadership of the Palestine Liberation Organization (PLO).

The PLO initially demanded the "liberation" of the whole of Palestine, but later recognised the two-state solution based on the 1967 border. Israel initially rejected any Palestinian claim to the land and continued to term the PLO as a "terrorist" organisation. But in the Camp David Accords, which followed the 1973 Yom Kippur War in which Egypt and Syria surprised Israel with an attack, it agreed to the Framework for Peace in the Middle East agreement. As part of the Framework, Israel agreed to establish an autonomous self-governing Palestinian authority in the West Bank and Gaza Strip and implement the UN Resolution 242, which has demanded Israel pull back from all the territories it captured in 1967. The Framework laid the foundation for the Oslo Accords, which, signed in 1993 and 1995, formalised the two-state solution. As part of the Oslo process, a Palestinian National Authority, a self-governing body, was formed in the West Bank and Gaza and the PLO was internationally recognised as a representative body of the Palestinians. The promise of Oslo was the creation of a sovereign Palestinian state which would live next to the Israeli state in peace. However, this promise has never been materialised.



### What are the hurdles to achieving the two-state solution?

The first setback for the Oslo process was the assassination of Yitzhak Rabin, the Israeli Prime Minister who signed the accords, in November 1995 by a Jewish extremist. Rabin's Labour party was defeated in the subsequent elections and the right-wing Likud, under Benjamin Netanyahu's leadership, came to power. The rise of Hamas, the Islamist militant group that opposed the Oslo Accords saying the PLO made huge concessions to the Israelis, also contributed to the derailment of the peace process. After the collapse of the Oslo process in the 1990s, there were multiple diplomatic efforts to revive the two-state plan, but none of these made progress towards achieving the goal.

Multiple reasons could be identified for this failure. But there are specific structural factors that make the two-state solution unachievable, at least for now. One is the boundary. Israel doesn't have a clearly demarcated border. It is essentially an expansionist state. In 1948, it captured more territories than it was promised by the UN. In 1967, it expanded further by taking the whole of historical Palestine under its control. From the 1970s, Israel has been building illegal Jewish settlements in Palestinian territories. While Palestinians say their future state should be based on the 1967 border, Israel is not willing to make any commitments.

Two, the status of settlers. Roughly 7,00,000 Jewish settlers are now living in the West Bank and East Jerusalem. If Israel is to withdraw to the 1967 border, they will have to pull back the settlers. The settlers are now a powerful political class in Israeli society and no Prime Minister can pull them back without facing political consequences. Three, the status of Jerusalem. Palestinians say East Jerusalem, which hosts Al Aqsa, Islam's third holiest mosque, should be the capital of their future Palestinian state, while Israel says the whole of Jerusalem, which hosts the Western Wall, the holiest place in Judaism, is Israel's "eternal capital". Four, the right of refugees to return to their homes. Some 7,00,000 Palestinians were displaced from their homes in 1948 when the state of Israel was declared. According to international law, they have a right to return to their homes. Israel says it won't allow the Palestinian refugees to return.

While these are the structural factors that make the two-state solution complicated, on the ground, Israel's rightwing leadership shows no willingness to make any concessions. Israel wants to continue the status quo — the status quo of occupation. The Palestinians want to break that status quo.

### CHINA TO HOST NEXT HAMAS, FATAH TALKS MID-JUNE

Deep divisions will limit progress at reconciliation talks between Palestinian factions Hamas and Fatah this month, conversations with five sources in the groups indicate, but the meetings highlight that the Islamist group is likely to retain influence after Israel's war in Gaza.

— The talks between Hamas and the Fatah party of Palestinian President Mahmoud Abbas will be held in China in mid-June, according to officials from both sides. They follow two recent rounds of reconciliation talks, one in China and one in Russia. China's foreign ministry declined to comment.

— The next meeting will be held amid attempts by international mediators to reach a ceasefire deal for Gaza, with one of the key sticking points being the "day-after" plan – how the enclave will be governed.



— Considered a terrorist organisation by many Western nations, Hamas was shunned long before its Oct. 7 attacks killed 1,200 people in Israel, with more than 250 hostages taken, triggering the war in Gaza.

— Hamas, which ruled Gaza before the war, recognises it cannot be part of any internationally recognised new government of the Palestinian territories when fighting in the enclave eventually ends, said the source.

— Nonetheless, it wants Fatah to agree to a new technocratic administration for the West Bank and Gaza as part of a wider political deal, the source and senior Hamas official Basim Naim said.

**For Your Information:**

— Hamas is the largest Palestinian militant Islamist group and one of the two major political parties in the region. Hamas as a whole, or in some cases its military wing, is designated a terrorist group by Israel, the United States, the European Union, the United Kingdom, and other countries.

**ZELENSKY ATTENDS SHANGRI-LA DIALOGUE TO GATHER SUPPORT FOR SWITZERLAND SUMMIT**

Ukrainian President Volodymyr Zelenskiy arrived in Singapore for the Shangri-La Dialogue conference on Saturday, where he planned to meet U.S. Defense Secretary Lloyd Austin and discuss support for his embattled country in an address to delegates.

— After arriving at the conference venue, Zelenskiy said in a statement on the social media platform X that he had come to gather support from the Asia-Pacific region for a peace summit planned for June 15-16 in Switzerland.

— “Global security is impossible when the world’s largest country disregards recognised borders, international law, and the U.N. Charter, resorts to hunger, darkness, and nuclear blackmail,” the statement said, referring to Russia, which invaded Ukraine in 2022.

— The International Institute of Strategic Studies (IISS), which organises the security conference, said Zelenskiy would participate in a discussion session on Sunday entitled “Re-Imagining Solutions for Global Peace and Regional Stability”.

**For Your Information:**

— The government of Switzerland announced on April 10, 2024 that it will host a major summit on June 15-16 as a “first step” for lasting peace in Ukraine following Russia’s invasion in February 2022.

**SHORT ON TROOPS, AUSTRALIA OPENS MILITARY TO NON-CITIZEN RESIDENTS FROM FIVE EYES**

Australia will allow non-citizens to join its armed forces, the government said on Tuesday, as the sparsely populated nation struggles to meet recruitment targets.

Defence Minister Richard Marles said that from July, looser eligibility criteria would allow “permanent residents who have been living in Australia for 12 months” to serve.

Citizens from Britain, Canada, New Zealand and the United States are being favoured, he added.



Australia has a coastline that would stretch one-and-a-bit times around the Earth, but a population of just 26 million.

Canberra has surged defence spending in recent years, buying fleets of submarines, jets and scores of fighting vehicles to meet mounting regional tensions. But it has struggled to find enough pilots, mariners and troops to operate and maintain them.

Experts warn too few Australians don a uniform to meet even current requirements, much less a beefier military of tomorrow.

The Australian Defence Forces can today count on about 90,000 personnel, including reservists, according to the Australian Strategic Policy Institute.

## A NEW ERA

The African National Congress (ANC), South Africa's ruling party that led the country out of apartheid three decades ago, suffered a setback in the May 29 general election when it lost its majority in Parliament for the first time. In the final results on Sunday, the ANC, currently led by President Cyril Ramaphosa, saw a dramatic fall in its vote share to 40.18%, from 57% in 2019, while the main opposition Democratic Alliance emerged as the second largest party with 21.81% vote. The surprise was the surge of the uMkhonto weSizwe (MK), a left-wing party founded in December and led by Jacob Zuma, the scandal-ridden former President, which secured 14.58% of the votes. The far-left Economic Freedom Fighters (EFF), led by Julius Malema, former ANC Youth League leader, came fourth with 9.52% vote. The ANC's decline itself was not surprising, from the peak of its popularity in 2004, when it won nearly 70% vote. A whopping 17 percentage point drop in vote share points to the rapid erosion of confidence the electorate has in the party which was once led by Nelson Mandela.

When Mr. Ramaphosa became President in 2018, after Mr. Zuma was forced to resign, he promised economic stability, employment and modernisation of infrastructure. But under six years of his rule, there has been little progress in addressing the critical problems of Africa's most advanced economy, which has shrunk over the past two and a half years. Officially, at 32%, the country has one of the highest unemployment rates. Voters also complain about a lack of quality water supply, hours-long power blackouts and rampant violent crimes. After three decades of ANC rule, nearly two-thirds of Black South Africans are living in poverty, as compared to 1% of white South Africans. The ANC knew voters were upset, and Mr. Ramaphosa sought votes in the name of the party's legacy rather than its performance. But voters did not buy into his arguments. The ANC breakaway parties winning more votes than the right-wing Democratic Alliance suggests that the legacy of anti-apartheid politics remains strong, despite the ANC's decline. The three opposition parties have shown an interest in coalition talks, but with riders. The MK will join hands with the ANC only if Mr. Ramaphosa steps aside and the EFF has a radical economic agenda, including expropriation of land. A tie-up with the Democratic Alliance, which is largely seen as a representative of the apartheid era, would not be popular with the ANC's base. Mr. Ramaphosa is in an unenviable position. The era of the ANC's dominance is over. He should form a coalition that would not mar the party's anti-apartheid legacy and keeps it in good stead so that it can focus on resolving the country's myriad economic woes.



### 35 YEARS OF TIANANMEN CRACKDOWN

- In April 1989, students from universities in Beijing convened in Tiananmen Square to outline a series of demands focused primarily on political and economic reforms. They also called for an end to corruption, censorship, and restrictions on fundamental rights.
- Over the ensuing weeks, their demands garnered extensive public backing, attracting support from various segments of society, including pensioners, veterans, and farmers. Millions participated in peaceful protests that spread throughout China.
- The Chinese government was unable to convince the demonstrators to disperse. As the situation in Beijing grew more intense, martial law was declared on May 20, 1989. On the night of June 3, 1989, heavily armed soldiers and hundreds of armoured vehicles advanced into the city centre to forcibly remove the pro-democracy protesters from Tiananmen Square.

### AS SHEHBAZ VISITS CHINA, THE HOPE AND UNFULFILLED PROMISE OF CPEC

Pakistan's Prime Minister Shehbaz Sharif is on a five-day visit to China, his country's biggest and most important ally. The second phase of the China-Pakistan Economic Corridor (CPEC) is expected to be formally announced during the visit.

— The \$62-billion CPEC, which was launched in 2015, is part of President Xi Jinping's Belt and Road Initiative (BRI), aimed at expanding China's geopolitical influence through billions of dollars of investments in infrastructure projects in around 100 countries.

— The CPEC would facilitate the construction of power plants, road and rail networks, and the deep-sea port of Gwadar in Pakistan. For China, the project is of strategic significance and will provide it direct access to the Indian Ocean through highways in Pakistan-Occupied Kashmir and down the length of Pakistan.

— According to the International Monetary Fund, China holds roughly \$30 billion of Pakistan's \$126 billion external debt, up from just \$4 billion in 2013, prior to the announcement of the CPEC. An IMF report also found that between July 2021 and March 2022, more than 80% of Pakistan's bilateral debt service went to Beijing.

**For Your Information:**

— CPEC project refers to a clutch of major infrastructure works currently under way in Pakistan, intended to link Kashgar in China's Xinjiang province to Gwadar deep sea port close to Pakistan's border with Iran. Several other road, rail and power projects are associated with the corridor, and the project seeks to expand and upgrade infrastructure across the length and breadth of Pakistan, and to widen and deepen economic ties with its "all-weather friend", China.

— The CPEC is part of China's larger regional transnational 'One Belt One Road' (OBOR) initiative, whose two arms are the land-based New Silk Road and the 21st century Maritime Silk Road, using which Beijing aims to create a Silk Road Economic Belt sprawled over a large patch of Asia and eastern Europe, and crisscrossed by a web of transport, energy supply, and telecommunications lines.



## NATION

### UN SECY GEN CONFERS GENDER ADVOCATE AWARD ON INDIAN MAJOR: 'TRUE ROLE MODEL'

Major Sen, who served with the United Nations Organisation Stabilisation Mission in the Democratic Republic of the Congo (MONUSCO), received the prestigious '2023 United Nations Military Gender Advocate of the Year Award' from Guterres during a ceremony at the world body's headquarters on Thursday on the occasion of the International Day of UN Peacekeepers.

— Major Sen has served in the Democratic Republic of the Congo (DRC) from March 2023 to April 2024 as the Commander of MONUSCO's Engagement Platoon for the Indian Rapid Deployment Battalion (INDRDB).

— "A gender perspective in UN peacekeeping is essential for an effective, inclusive and sustainable peace process. Women and girls are disproportionately affected in conflict, facing increased risk and abuse. The need of the hour is to mainstream the women in nation-building, particularly in sectors of security and governance," she said.

#### For Your Information:

— A total of 119 countries have contributed military and police personnel to UN peacekeeping. Currently, 72,930 of those serving are troops and military observers, and about 8,890 are police personnel.

— India has a long history of service in UN Peacekeeping, having contributed more personnel than any other country. To date, more than 2,53,000 Indians have served in 49 of the 71 UN Peacekeeping missions established around the world since 1948.

— Currently, there are around 5,500 troops and police from India who have been deployed to UN Peacekeeping missions, the fifth highest amongst troop-contributing countries.

### CENTRAL INFORMATION COMMISSION CAN'T COMMENT ON UTILISATION OF MPLADS FUNDS BY LEGISLATORS: DELHI HC

The Delhi High Court recently observed that the Central Information Commission (CIC) has no jurisdiction to comment on the utilisation of funds by the members of Parliament under the Members of Parliament Local Area Development Scheme (MPLADS).

— The CIC in its October 16, 2018, order said, "The Commission noticed that some MPs are not spending their MPLADS amounts in the earlier years of their term, but deliberately accumulating the funds for last year, preferably before general elections to gain advantage improperly. The representatives could not say anything on this issue.

— The MPLADS is criticized for creating this kind of undue advantage to MPs vis-a-vis the contestants in the next election. If this is perpetuated there is a possibility of questioning it as unconstitutional.

— The Commission recommends the Ministry of Statistics and Program Implementation to prevent this kind of 'abuse' of MPLADS funds, and implement their guidelines to distribute the money equally in each year..."

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





— The high court said that as per section 18 of the RTI Act, the CIC can “only deal with issues relating to the information sought for under the RTI Act or any other issue which leads to dissipation of information as sought for by the applicant”.

— The court said the CIC has “no jurisdiction to comment adversely” on the “functioning” of any public authority. It further said the CIC had commented on the utilisation of MPLADS funds receivable by various members of Parliament.

— The court also said the observations in the CIC order on how the MPs are utilising the MPLADS funds “have to be expunged”. It went on to expunge two paragraphs where the CIC made observations regarding “utilization of MPLADS funds and the abuse of MPLADS funds”.

**For Your Information:**

— MPLAD is a central government scheme, under which MPs can recommend development programmes involving spending of Rs 5 crore every year in their respective constituencies. MPs from both Lok Sabha and Rajya Sabha, including nominated ones, can do so.

— States have their version of this scheme with varying amounts per MLA. Delhi has the highest allocation under MLALAD; each MLA can recommend works for up to Rs 10 crore each year. In Punjab and Kerala, the amount is Rs 5 crore per MLA per year; in Assam, Chhattisgarh, Maharashtra and Karnataka, it is Rs 2 crore; in Uttar Pradesh, it was recently increased from Rs 2 crore to Rs 3 crore.

### HIGH COURT JUDGE BECOMES FIRST IN GOA TO REGISTER ‘LIVING WILL’

Justice M S Sonak, who serves on the Goa Bench of the Bombay High Court, on Friday became the first person in Goa to register a “living will” – an advance medical directive for his family for when he cannot make his own decisions.

— The Supreme Court had in 2018 legalised passive euthanasia, contingent upon the person having a “living will”, or a written document that specifies the actions to be taken if the person is unable to make their own medical decisions in the future.

— The Supreme Court had allowed passive euthanasia while recognising the living wills of terminally-ill patients who could go into a permanent vegetative state and issued guidelines regulating the procedure.

— Officials said Goa is the first state to implement and operationalise advance medical directives. As per the guidelines, a person who wants to make a living must draft it per the reference format in the presence of two witnesses.

— The will then has to be duly certified by a gazetted officer or a notary, and forwarded to the main Mamlatdar of the taluka, who shall then send it to the nodal officer appointed by the District Collector for safe custody.

**For Your Information:**

— The Netherlands, Luxembourg, and Belgium allow both euthanasia and assisted suicide for anyone who faces “unbearable suffering” that has no chance of improvement.

— Switzerland bans euthanasia but allows assisted dying in the presence of a doctor or physician.



- Canada had announced that euthanasia and assisted dying would be allowed for mentally ill patients by March 2023; however, the decision has been widely criticised, and the move may be delayed.
- The United States has different laws in different states. Euthanasia is allowed in some states like Washington, Oregon, and Montana.
- The United Kingdom considers it illegal and equivalent to manslaughter.

## BIZARRE JUDGMENT

It is an old principle that ignorance of law is no excuse. Evidently, this applies not only to offenders but also to judges. The Madhya Pradesh High Court's order ruling declining to give protection to a couple on the ground that a marriage between a Muslim man and Hindu woman will not be valid, even if registered under the Special Marriage Act (SMA), 1954, reflects an incredible misunderstanding of the law. The judge examined Muslim law treatises to conclude that a Muslim cannot marry an "idolatress or fire-worshipper", as such a marriage would be irregular. The SMA was passed precisely to allow inter-faith couples to get married without the requirements of marriage rituals associated with their religions. For a court to dissect the personal law requirements of the parties to enter into a valid marriage, when all they wanted was police protection to appear before the Marriage Registration Officer, is nothing short of bizarre. The question raised by Justice G.S. Ahluwalia — whether the inter-faith marriage that was intended to be registered under the SMA will be valid under Muslim law — is utterly irrelevant to the case at hand. Even though counsel for the couple advanced the correct argument that the Special Marriage Act would override the personal law of their respective religions, the judge chose to examine whether such a marriage would be valid or void or irregular under Mohammedan law.

The judge concedes that when a marriage is performed under SMA, it cannot be challenged on the ground of non-performance of mandatory marriage rituals. The only justifications offered by the judge is that the SMA itself provides that when the parties are within the degrees of prohibited relationship, it shall not be valid. From this, he draws a conclusion that a marriage that is invalid in personal law cannot be legalised by registering it under the SMA. It is clear that this is only a salutary provision that exists to prevent the Act from being misused to solemnise the marriage of those in prohibited relationships, and does not mean that every inter-faith marriage has to be scrutinised for compliance with personal law requirements. It is strange that the court underscores that the woman petitioner in this case did not want to convert to Islam, but at the same time examines the case through the lens of Muslim law. This is nothing but an attempt to impose religious personal law on those opting for a secular marriage. Allowing this judgment to stand will render the entire Special Marriage Act superfluous. It will also undermine any move towards a uniform civil code, and privileges Muslim personal law over the secular Special Marriages Act. In effect, it could drive people to religious conversion just for the sake of solemnising their marriages.

## PRAJWAL REVANNA'S ARREST BY ALL-WOMAN POSSE IS A POWERFUL IMAGE

What does the world see when it looks at the now-viral image of Prajwal Revanna — scion of a political dynasty, Member of Parliament and rape accused — being led away from Bengaluru airport by a posse of women cops? First, and most obvious, it sees the law taking its course, investigating and acting against a man who has been accused of using his considerable clout to abuse and prey upon multiple women. But there is another message coded into the image — the

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



reversal of a power imbalance in a deeply patriarchal society, where abused women are further silenced by the twin weapons of stigma and shame.

It is no coincidence that this is the very thing Prajwal has been accused of — sexual abuse, and also recording videos of the acts. While the circulation of the videos is what eventually led to a case being filed against him, it had also ended up adding to the trauma of those Prajwal is alleged to have victimised, compounding the abuse they had allegedly already endured.

Which is why the decision to have an all-women team of police officers arrest Prajwal is so potent. It communicates, as one member of the Karnataka Police's Special Investigation Team said, "[the] message that women have the authority to put him through legal proceedings for having allegedly misused his power to exploit women." This is, in other words, the image of woman, not as the eternal victim, but as an agent of justice, and hero. For the Karnataka police to have not only understood the power of such an image in a case like the one against Prajwal, but to have also used it with such deliberation and intent, is heartening.

### NATIONAL HUMAN RIGHTS COMMISSION (NHRC)

The NHRC of India was established on October 12, 1993, under the Protection of Human Rights Act (PHRA), 1993, which was later amended by the Protection of Human Rights (Amendment) Act, 2006.

The NHRC is a multi-member body comprising a chairperson and five members.

Following the retirement of former Supreme Court judge Arun Mishra, who served as the chairperson of the NHRC for three years, the President has appointed Vijaya Bharathi Sayani as the acting chairperson.

### TWO ALARM BELLS

The victory of two Independents in Punjab has raised concerns. Waris Punjab De chief Amritpal Singh, incarcerated in Dibrugarh jail under the National Security Act (NSA), won the Lok Sabha seat of Khadoor Sahib. Sarabjit Singh Khalsa, the elder son of Beant Singh, the assassin of Prime Minister Indira Gandhi, secured the Faridkot seat after three unsuccessful attempts. It may not be incidental that their victories came in an election in which long-term allies, Shiromani Akali Dal and Bharatiya Janata Party, contested separately for the first time in decades. In its best version, the BJP-SAD alliance was seen as a guarantor of communal harmony in the border state that experienced protracted militancy in the 1980s.

For years, the Akalis provided a moderating influence in the panthic space, but their credibility suffered after the incidents of sacrilege that wracked the state in 2015. It eroded further during the farm agitation, which also became the trigger for the SAD breaking the alliance with the BJP, leading to a vacuum that actors like Amritpal are now trying to fill. While Sarabjit may have benefited from the focus on Operation Bluestar due to its 40th anniversary this year and anti-incumbency against the ruling Aam Aadmi Party, his win also points to Punjab's unresolved issues. The SYL river water-sharing agreement, which sparked the Dharam Yudh Morcha in the 1980s, taken over by militant ideologue Jarnail Singh Bhindranwale, justice for victims of the 1984 killings, remission for Sikh political prisoners who have been in jail for over three decades, and the continuing menace of drugs are issues that continue to fester and provide fodder to forces inimical to peace in the state. Amritpal, with his diatribe against drugs and an "unjust Indian state,"



is also capitalising on these issues, although many state leaders are openly suspicious about his antecedents. Both the Akalis and the Congress have called him a “plant” to destabilise the state.

The impact of these two poll wins will depend on how they are handled by both the Centre and the state government. All political parties with a stake in the state should learn from mistakes of the recent past. It would be a grave error to use these victories to polarise the state for electoral gain. What Punjab needs most is unity and resolve to address longstanding grievances. The border state with a bleeding economy in the throes of an agrarian crisis can ill afford another upheaval. While focusing on these two wins, and what they could mean, however, it is important to note that the polls also saw the defeat of one of the original hardliners, Simranjit Singh Mann, the Shiromani Akali Dal (Amritsar) chief, who won his first election while in jail in 1989.

#### PARLIAMENT STATUES WERE MOVED TO DENY OPPOSITION A PLACE TO PROTEST: CONGRESS

The statues of Mahatma Gandhi, B.R. Ambedkar, and Chhatrapati Shivaji, among others, have been relocated within the Parliament complex to ensure that Opposition parties cannot hold democratic protests, the Congress alleged on Friday.

Congress general secretary Jairam Ramesh, in a post on X, said that such “stunts” cannot save Narendra Modi’s “unstable government from falling”.

Mr. Ramesh also dismissed the Lok Sabha Secretariat’s explanation for relocating the statues as “wholly bogus” and said that it was a unilateral move, carried out without consulting any political party.

On Thursday, the Lok Sabha Secretariat said that the statues were being relocated to a specially designated place within the complex so that it would be convenient for visitors to see them.

“For this reason, all these statues are being respectfully installed in a grand ‘Prerna Sthal’ in Parliament House premises. This ‘Prerna Sthal’ is being developed in such a way that the visitors coming to visit the Parliament complex view the statues of these great persons conveniently and get inspired by their life experiences,” the statement said.

It added that the complex came under the Speaker’s jurisdiction and that statues had been shifted inside the complex with the Speaker’s permission earlier as well.

#### CENTRAL HALL: WHERE MODI ADDRESSED NDA, HISTORIC VENUE IN PARLIAMENT

Three days after the 2024 Lok Sabha election results, in a meeting of the Bharatiya Janata Party (BJP)-led National Democratic Alliance (NDA) on Friday (June 7), Prime Minister Narendra Modi was unanimously elected as the coalition’s Parliamentary Party leader. The event took place at the Central Hall of the old Parliament building.

The circular Central Hall, topped by a dome 98 feet in diameter, has witnessed several historical events since it was established in 1927. Here is a short history of Central Hall over the years.

**But first, can Central Hall be used by political parties or coalitions for their private events?**

The Parliament House Complex in the heart of New Delhi contains several buildings: the new Parliament House that was opened last year; the old Parliament House, the iconic circular building



that has now been renamed as Constitution House; Parliament House Annexe; and the Parliament Library Building.

The Speaker of Lok Sabha is the custodian of the Parliament House Complex. Political parties and groups are allocated office space inside the complex. They can hold meetings with their members on the premises. In the past, political parties have held their Parliamentary Party meetings at venues within the complex, including at the Balayogi Auditorium in the Parliament Library Building.

In May 2014, soon after the announcement of that year's Lok Sabha election results, Modi was elected leader of the BJP Parliamentary Party at a meeting held in Central Hall.

#### **What is the history of the Central Hall?**

Central Hall was originally used as the library for the members of the legislature.

In 1946, when the Constituent Assembly needed a space to meet to deliberate on the Constitution of independent India, Central Hall was refurbished and benches were added — its name was changed to Constituent Assembly Hall. The Constituent Assembly met at this venue for about three years between 1946 and 1949.

#### **For what other purposes has Central Hall been used over the years?**

It was primarily used for formal occasions such as the annual President's Address to Members of both Lok Sabha and Rajya Sabha, and swearing-in ceremony of the President. It was also the venue for farewells of the President, and Parliamentary events like the outstanding Parliamentarian award ceremony.

Central Hall was used for addresses by Heads of State of other countries. The last address was by Inter-Parliamentary Union (IPU) President Duarte Pacheco in March 2021 and before him, it was then United States President Barack Obama in November 2010.

During the term of the 14th Lok Sabha (2004-2009), then Speaker Somnath Chatterjee organised lectures by academics and scholars such as the American economist Jeffrey Sachs and Nobel Laureate Amartya Sen at Central Hall.

During Parliament Sessions, members of both the Houses would convene at the spot to discuss issues of the day over tea and coffee.

More recently, the venue was used for the National Conference of Women Legislators (in March 2016), for centenary celebration of the Public Accounts Committee (2021), and for student programmes organised by the Parliament Secretariat.

#### **What is the current status of the old Parliament House where Central Hall is located?**

The chambers of the old Parliament House are currently not being used for holding Sessions. Lok Sabha and Rajya Sabha meet in the new building. However, the Parliament Secretariat has some offices that continue to operate out of the old building.



## BEHIND OPPOSITION POSTAL BALLOT CONCERN, ELECTION COMMISSION RULE CHANGE IN 2019

Ahead of the counting of votes in the Lok Sabha elections on June 4, the INDIA bloc on Sunday asked the Election Commission to issue directions to Returning Officers to complete the counting of postal ballots before finalising the EVM counting.

The Opposition's concern stems from a change in the EC's guidelines in 2019 for counting of postal ballots. Till the 2019 LS elections, the counting of postal ballots was taken up first and EVM counting began 30 minutes after that. And all postal ballots had to be counted before the EVM counting could be completed.

"Under no circumstances, should the results of all the rounds of the EVM counting be announced before finalising the postal ballot counting," stated the EC's Handbook for Counting Agents in February 2019. Now, the postal ballot counting starts 30 minutes before the EVM counting, but does not have to be completed before the EVMs.

After the 2019 elections, the EC decided to tweak the guidelines as the number of postal ballots had gone up, especially after the introduction of the Electronically Transmitted Postal Ballot System (ETPBS), and the mandatory counting of VVPAT slips of five randomly selected polling stations per Assembly constituency or Assembly segment.

In directions to all Chief Electoral Officers on May 18, 2019, the EC withdrew its earlier guideline that the penultimate round of EVM counting should be taken up only after postal ballots counting is complete. Instead, it said, the EVM counting "can go on irrespective of the stage of postal ballot counting". Once the EVM counting is complete, the VVPAT slips can be counted. It also revised the rule for mandatory re-counting of postal ballots. Earlier, postal ballots were recounted if the margin of victory was less than the total number of postal ballots. Now, the postal ballots that are rejected as invalid during counting would be re-verified if the margin is less than the number of such ballots.

While a total of 22.71 lakh postal ballots were received during the 2019 Lok Sabha elections or 0.37% of the total 60.76 crore valid votes, the number of postal ballots is expected to be higher this time. Apart from service voters like defence forces, who are deployed outside their home states, the EC in October 2019 introduced postal ballots for essential service workers, those above 80 years of age and persons with disabilities. Since then, the age limit has been increased to 85 years for seniors and Covid-19 patients have been included in the list of those eligible for postal ballots.

As the guidelines stand today, as per the 2023 Handbook for Counting Agents, "After 30 minutes of commencement of postal ballot counting, the EVM counting can start and continue irrespective of the stage of postal ballot counting. Once the EVM counting is completed, the VVPAT slip counting can also start."

With the number of postal ballots expected to increase, the Opposition parties have expressed concern over the counting process. In their letter to the EC, they pointed out that the winning margin in the 2020 Bihar elections was 12,700 votes for the state, while the number of postal ballots was 52,000. "In fact, there was a huge outcry in Bihar as it was the first election (which was conducted after the onset of the Covid-19 pandemic) where the postal ballots were counted at the end of the counting of EVM votes," the INDIA parties said.



They asked the EC to withdraw the May 2019 letter and to issue directions in consonance with Rule 54A of the Conduct of Elections Rules, 1961, which says “the returning officer shall first deal with the postal ballot papers...”

## 2024 LOK SABHA ELECTION RESULTS: WHAT HAPPENS AT COUNTING CENTRES

— Counting is carried out under the supervision and direction of the Returning Officer (RO) for each seat, in the presence of the candidates and their election agents. The RO, typically the District Magistrate of the district concerned, is nominated by the ECI.

— Assistant Returning Officers are also empowered to oversee the counting, especially where an RO is responsible for more than one constituency. The actual counting of votes in the EVMs at various tables is done by counting officials appointed by the RO, based on the anticipated number of postal ballots and the number of counting tables.

— The following are allowed to enter the counting hall: counting supervisors, counting assistants, micro-observers, ECI-authorized individuals and Observers, public servants on election duty, and candidates, election agents, and counting agents.

— The law permits the candidate to appoint as many counting agents as there are counting tables, including the table where postal ballots are counted.

— Police officers and government ministers are not classified as “public servants” in this context. No one, including the candidate, RO, or Assistant RO, is permitted to carry a mobile phone inside the counting hall. The only person who can do so is the ECI’s Observer.

— Rule 51 (“Time and place for counting of votes”) of The Conduct of Election Rules, 1961, says that the “returning officer shall, at least one week before the date, or the first of the dates, fixed for the poll, appoint the place or places where the counting of votes will be done and the date and time at which the counting will commence...”. The ECI’s Handbook for Returning Officers says: “For the sake of uniformity, the date and time of counting of votes is fixed by the Commission.”

— Two types of votes are counted: EVM votes, and votes cast through postal ballots (which are used for senior citizens, physically challenged individuals, service voters, etc). Postal ballots are counted separately from EVM votes.

— The tallying of VVPAT commences after all rounds of EVM counting are completed. This process is done sequentially, not simultaneously, for all polling stations. On average, it takes about an hour to verify the slips from each VVPAT machine.

## EXIT EXIT POLLS

Exit polls are an important feature of the electoral process in a democracy. They help gauge public opinion, provide important clues on which way the wind is blowing. But when their results are so wide off the mark — on Saturday, several polls had predicted that the BJP-led NDA would get a roughly two-thirds majority, with some even projecting the NDA would touch 400 seats — it is only natural for questions to be raised. More so when they have shown the power to move markets. On Monday, the BSE Sensex had surged, ending the day up 2,507 points or 3.39 per cent, as investors were enthused with these polls, which indicated a return of the incumbent with a comfortable majority. But, on Tuesday, when the actual results were declared, and reality was different by a dramatic margin, the markets tanked 5.74 per cent.



There is always the possibility of barometers going wrong. However, this is not a one-off. There have been several instances in the past of a marked divergence in the results of exit polls and actual electoral outcomes — as it was in the case of the Lok Sabha elections in 2004, and in assembly elections in Bihar in 2015 and Chhattisgarh in 2023. Pollsters need to urgently look within. They must carefully examine how the sample households/respondents are chosen and whether they are an accurate representation of the voting population. They must investigate if some sections of voters are underrepresented in their analysis. Is that why they failed to capture the swings in seats? What was the error in sampling? And how were the questions framed and the responses elicited? After all, few had expected the INDIA alliance to touch 200 seats. Stricter disclosure norms regarding the funding of these organisations and surveys also need to be put in place. There is a collateral damage that such surveys have in times when large sections of TV media are seen as megaphones of those in power and have lost their credibility. Their alignment with the exit polls puts another question mark on their reputation.

Their performance in this election should prompt soul-searching among pollsters. The absence of convincing answers will only lend credence to conspiracy theories that question their motives. They must go back to the drawing board. After such a drubbing, they must answer tough questions to continue to be taken seriously.

#### MAKING ROOM FOR WOMEN IN POLITICS DEMANDS A NEW POLITICAL IMAGINATION

In September last year, when the Women's Reservation Bill was passed in Parliament, it raised hopes of a more gender-equal legislature. The near-unanimous support for a Bill that promised 33 per cent reservation to women in Lok Sabha and state assemblies seemed to frame a political class that had finally accepted an idea whose time had come. Yet, eight months on, with the 18th Lok Sabha set to convene for its first session in a few weeks, the number of women in the lower House has dropped, from 78 out of 543 (an all-time high) in the 17th Lok Sabha to 73. It is clear that greater efforts must be made to break from the boys-club mindset, which continues to dominate politics.

Since the 1991 general election, when the gap between male and female voter turnouts started narrowing, women's imprint on the political landscape has only become larger and deeper. In the recent elections too, while the number of women who turned out to vote saw a dip in some phases, the overall gender gap was almost non-existent, with both male and female voter turnout pegged at about 66 per cent by the Election Commission. Women have used the power that comes with their participation to shape electoral outcomes, with even political parties recognising the growing importance of the "woman vote". This recognition has mostly taken the form of targeted welfare schemes that have often taken campaign centrestage, including in the recent Lok Sabha polls: In West Bengal, for instance, the popularity of women-centric schemes such as Lakshmir Bhandar, a monthly cash transfer to over 2 crore women, is believed to have helped in sustaining the dominance of the ruling TMC. Earlier, the impact of Laadli Behna was seen to play a role in the BJP's return to power in the Madhya Pradesh assembly polls.

Yet, for women to have any real impact in politics, they cannot only be viewed as voters and beneficiaries — the national political imagination will need to accommodate and embrace the idea of women leaders and decision-makers. Other countries can show the way: In Mexico, which elected its first woman president, Claudia Sheinbaum, this week, quotas for women at every level of politics, including at the ticket distribution stage, have helped in the rapid progress of gender equality. Countries like Norway, Sweden, Denmark and the Netherlands, with the highest female political representation, employ other kinds of affirmative action; parties in Sweden, for example,





use the “zipper system”, wherein candidate lists alternate between male and female candidates. For India, the Women’s Reservation Bill is neither the beginning nor the end of the road to gender parity in politics — it is one milestone among many more to come.

### THIRD AVATAR

Elected the leader of the National Democratic Alliance (NDA) on June 7, Narendra Modi is set to become Prime Minister for a third consecutive term. The swearing-in is to be on June 9. Though the Bharatiya Janata Party (BJP) fell short of a majority in the Lok Sabha, the NDA appears well poised for the third term, in terms of numbers and political compatibility among its partners. Key partners were effusive in their praise for Mr. Modi at the NDA meeting, who in turn struck all the conciliatory notes. He promised to strive for unanimity in all decisions taken by his next government, and underscored a commitment to ‘sarv pantha sambhava’ — equality of all sects. Telugu Desam Party leader N. Chandrababu Naidu, who is set to return as the Chief Minister of Andhra Pradesh, and Bihar Chief Minister and Janata Dal (United) leader Nitish Kumar — two partners as part of the pre-poll alliance that won the 2024 election and with the largest numbers after the BJP — showed no ambiguity in staying the course with the BJP. The alliance is off to a harmonious beginning, and it will require leadership and compromise by all parties to keep it that way. While all partners declared their respect for the renewed mandate for Mr. Modi, it is only natural that the caveat of coalition will apply too. The BJP’s numbers are higher than its own under A.B. Vajpayee and of the Congress-led UPA governments, from 2004 to 2014.

Unanimity on all issues is not easy, but consultations can be, and those should go beyond the NDA’s partners. Mr. Modi said he looked forward to more debates in the 18th Lok Sabha — a case that cannot be overstated, considering the erosion of parliamentary authority during the 17th Lok Sabha. Mr. Modi’s second term had begun with a promise of seeking the trust of all — sabka vishwas, as he called it. That promise remained largely unrealised, particularly with regard to the religious minorities. There was no numerical restraint during the second term for Mr. Modi, but during his third, his government’s survival will be dependent on non-BJP partners, necessitating compromises. The test of the democratic spirit will be in consensus building beyond the ruling coalition. The BJP, despite the setback it faced in the general election in heartland strongholds, expanded its footprint among new regions and communities in the south and the northeast, a point Mr. Modi noted in his speech at the NDA meeting. The Opposition too has emerged as a stronger presence in Parliament. The fresh mandate for Mr. Modi necessitates that he change his approach to governance and politics.

### FOR A CONSENSUS

With the curtains coming down on the general election 2024, every party will take stock of its campaign on issues of domestic political importance. However, it is also necessary for all concerned, particularly those forming the next government, to review the disturbing trend of revisiting questions of foreign policy. Both sides have ratcheted up the rhetoric over India’s international ties and in some cases, even the re-opening of settled bilateral agreements. At the start of the campaign, the ruling party focused on the issue of the half-century-old Katchatheevu agreement, that accepted the island as Sri Lankan territory, to target the Opposition Congress and the DMK that were in power in 1974. In response, Congress leaders asked whether the 2015 Land Boundary Agreement with Bangladesh could also be reviewed for its land concessions. Prime Minister Narendra Modi has led the charge on other foreign policy fronts, especially on Pakistan, calling the Congress party a “disciple of Pakistan” and comparing its manifesto pejoratively to that



of the Muslim League that founded Pakistan. U.P. Chief Minister Yogi Adityanath even proclaimed that were Mr. Modi to be re-elected, he would reclaim Pakistan Occupied Kashmir “within six months”. Other brash comments over India’s use of its nuclear arsenal, or that the government will transgress international boundaries to kill ‘terrorists threatening India’, have raised eyebrows in many capitals. The clashes between the Indian Army and Chinese PLA at Galwan in 2020 that led to the deaths of 20 soldiers have often been raised by Opposition leaders in campaign rallies, as in the past as well. Meanwhile, throughout the campaign, Mr. Modi and External Affairs Minister S. Jaishankar accused “western powers” of attempting to interfere in Indian polls.

Such heated campaign rhetoric is meant for domestic audiences, but it would be unwise for political leaders to assume that India’s international partners are not watching and listening carefully. India’s ties with its smaller neighbours carry the highest levels of sensitivity, and raking up these issues and exposing India’s vulnerable faultlines, just to make political capital, seems short-sighted. While domestic policy has always been deeply divisive, India’s polity had for long achieved a bipartisanship when it came to foreign policy positions, and often took pride in the deployment of Opposition leaders to defend India’s case worldwide, including at the UN. The proper platform for the government to assert foreign policy, or for the Opposition to air its differences with it, is not the hustings, but Parliament. It is hoped that as the dust settles, leaders will reflect on the potential damage to India’s credibility from campaign propaganda, and restore a more enduring consensus on international relations.

#### TRUST IN CONTINUITY

The verdicts to the Assembly elections in India’s easternmost and smallest State by population, Arunachal Pradesh and Sikkim, respectively, might not be a harbinger of what is to come in the 2024 general election. But the decisive victories achieved by the incumbent parties, the Bharatiya Janata Party (BJP) in Arunachal Pradesh and the Sikkim Krantikari Morcha (SKM) in Sikkim, indicate that the electorates in two States, overwhelmingly, preferred continuity over change. Arunachal Pradesh Chief Minister Pema Khandu and his party received a strong mandate, winning 46 out of the 60 seats and increasing the BJP’s tally even further by five seats. Mr. Khandu enjoys the reputation of running a stable government in the State, far from the tumultuous period in 2016 when he took over the reins. With a focus on welfare delivery and infrastructure development that has further connected the State to the rest of the country, Mr. Khandu has earned the confidence of the electorate. The BJP-friendly parties, the National People’s Party and the People’s Party of Arunachal, also registered five and two wins each, while the Opposition Congress’s tally was reduced to just one seat. Supporters of the BJP and its main leader, Mr. Khandu, would celebrate the fact that in 10 out of the 60 seats there was no contest, which limited the chances of any upset. But this does not bode well for the State as a robust contestation of ideas and policies is a must for a functioning democracy.

Arunachal Pradesh would do well not to go the Nagaland way where, technically, there is no opposition as all the parties that contested against the BJP-Nationalist Democratic Progressive Party coalition joined the alliance after the elections in 2023. In Sikkim, the SKM, led by Chief Minister Prem Singh Tamang won 31 out of the 32 seats, with a lone seat going to the erstwhile dominant Sikkim Democratic Front. The SKM’s victory in a multi-cornered fight was made possible by the regional assertion by the party which mobilised support on the issue of retaining Sikkim’s special status enshrined in Article 371F of the Constitution, on Mr. Tamang’s promises to deliver Scheduled Tribe status to some Nepali-origin communities, and his emphasis on job



creation in the State. Sikkim's ruling party might have fought against the BJP and the latter might have drawn a blank, but the SKM still considers the BJP an ally. Notwithstanding the strong identity based politics in the north-east, voters choose the national party ruling at the Centre or its ally, dependent as these States are on central government funds. The overwhelming mandate in his favour should help Mr. Tamang, who will have to use all of his diplomatic powers to ensure benefits from the Union government.

#### NIPPED IN THE BUD

Criminal activity is mostly driven by a combination of socio-economic factors — poverty on one end, wealth on the other, and unmet needs or desires. The recent inter-State baby smuggling racket that was busted by the Telangana police should be seen under this lens. While news of baby smuggling rackets dominate headlines from time to time, blowing the lid off of this network has revealed chilling subterranean levels of operation, spanning several States. An inter-State gang smuggled children from Delhi and Pune and sold them to prospective parents in Telangana and Andhra Pradesh. As many as 11 people were arrested for the smuggling of as many as 50 babies in the past year. As per initial reports, the gang had been 'purchasing' babies from two persons in Delhi and one person in Pune, traffick them to Andhra Pradesh and Telangana and sell to the highest bidder among childless couples in these southern States. It is learnt that the rate for a baby could be between ₹1.80 lakh and ₹5.50 lakh, netting the brokers between ₹50,000 and ₹1 lakh as commission. Three women in the gang had apparently been booked for the same offence earlier.

Further investigation will reveal how the babies were procured, but this is not the first time such rackets have been busted. There is no reason to believe that the reasons were any different: poverty of the biological parents in many cases, urging them to sell their newborns for a paltry sum, and smuggling of newborns from government hospitals where security is lax. On the other end of the spectrum are couples eager to have children, and impatient with the long waiting time to adopt a baby legally. The current waiting time to adopt a child under two years can be anywhere between two to four years. While the lengthy process is put in place to ensure that the best interests of the child are served, the non-availability of babies for adoption has queered the pitch, allowing the demand to seek supply avenues by hook or by crook. Rounding up a gang might at best be a short-term measure in this particular situation. Children are not commodities to purchase at a premium from the free market when supply is low. The government needs to do many things at once to ensure such incidents do not occur again: provide effective poverty alleviation schemes; employment opportunities for youth; generate awareness about adoption schemes for both biological and adoptive parents; remove unnecessary bureaucratic processes in adoption, and ensure effective policing to nip such plots in the bud.

#### HOW AGNIBAAN ROCKET LAUNCH MARKS A TURNING POINT FOR INDIA'S SPACE SECTOR

Amidst all the political activity around the elections, a private space company, Agnikul Cosmos, carried out the first successful launch of its indigenously-built rocket last week, opening up a new chapter in India's space sector. The event was significant enough to be noticed by the Indian Space Research Organisation (ISRO) and everyone else in the space sector, in India and abroad. Prime Minister Narendra Modi, Home Minister Amit Shah, and External Affairs Minister S Jaishankar congratulated the company for the achievement.

To be sure, this was not the first time that an Indian private company had flown a rocket from Indian soil. In November 2022, Skyroot Aerospace, a young space start-up just like Agnikul,



successfully launched a rocket which it has named Vikram, after Vikram Sarabhai, the legendary space leader credited with building ISRO in the initial years. That moment too had been hailed by the President, Prime Minister, and many others.

The inaugural flight of Agnikul's creatively named Agnibaan rocket builds on the success of Skyroot and signals the range of options that are opening up in India's space market. Agnibaan was powered by the world's first 3-D printed engine, and was launched from Agnikul's own launchpad, built at ISRO's Sriharikota launch facility. Both Agnikul and Skyroot hope to begin launching commercial satellites on their rockets within a year.

#### **Small satellites**

The rocket flown on Thursday will eventually have several variants, capable of carrying payloads between 30 kg and 300 kg to lower earth orbits. The Skyroot rocket, Vikram, also has a few variants, with similar capabilities.

Both of these are targeting the small satellite market to cater to a rapidly growing demand for a variety of space-based applications in areas as diverse as communications, broadcasting, disaster management, climate change, earth and ocean observation, urban planning, and surveillance. These satellites are usually not meant for space exploration or scientific experiments.

ISRO itself is developing a new rocket, called SSLV or Small Satellite Launch Vehicle, to serve this demand. SSLV, which has flown twice but only once with success, is slightly more powerful and can carry payloads up to 500 kg.

#### **Agnibaan rocket**

The uniqueness of Agnibaan lies in the fact that its semi-cryogenic engine is entirely 3-D printed. The engine does not have any components or moving parts at all. There are no joints, no welding, and no fusing. It is a smooth single piece of hardware. The use of 3-D printing in space hardware is not a novel idea. But no one has used an entire engine that is 3-D printed.

3-D printing can increase efficiency, bring down costs, and reduce the probability of something going wrong. In an engine that is an assembly of several moving points, each joint or wiring is a potential source of error. Agnibaan's engine, named Agnilet, has been an entirely in-house development.

The fact that Agnibaan was launched from a privately owned launch pad is a first for India. Thus far, all space launches were carried out from one of the two ISRO launch pads at Sriharikota. Given the prospect of a sharp rise in the number of space launches, ISRO is in the process of developing a second space port, at Kulasekarapattinam in Thoothukudi district, Tamil Nadu. It is meant to be used mainly for SSLV launches.

Agnikul, the company, has built its own launch pad inside the Sriharikota range with the help of ISRO. It uses a lot of ISRO's facilities, but the separate launchpad gives it the flexibility to schedule its launches whenever it wants. Agnikul is hoping to carry out 35 to 40 launches of its Agnibaan rockets every year.

#### **Rise of private players**

Agnikul and Skyroot represent the success of India's efforts to open up the space sector for private participation. They are not alone. Dozens of space companies have come up in the last few years,



operating in different segments of the space market — satellites, space-based applications, hardware, communications, data centres, and everything else. Many of them have already started to make their mark.

With private players also coming in, space has become a sunrise sector that the government is promoting heavily. Prime Minister Modi has personally held several meetings with a select group of space entrepreneurs. Space has become an important part of India's diplomatic outreach to other countries, inviting other companies not just to utilise its capabilities for their own needs, but also to invest in an area that promises to grow at a very fast pace in the near and medium term.

#### ANAMIKA B RAJEEV

Sub-Lieutenant Anamika B Rajeev has made history by becoming the Indian Navy's first woman helicopter pilot. She received the prestigious "Golden Wings" at a passing-out parade held at a naval air station in Arakkonam, Tamil Nadu.

She will be flying helicopters such as Sea Kings, ALH Dhruvs, Chetaks, and MH-60R Seahawks, marking a significant milestone for women in the Indian Navy.

In another notable achievement, Lt Jamyang Tsewang, the first commissioned naval officer from Ladakh, also graduated as a qualified helicopter pilot.

In 2018, flying officer Avani Chaturvedi of the Indian Air Force became the first Indian woman to fly a fighter aircraft solo, piloting a MiG-21 Bison.

#### NAKSHATRA SABHA

The Uttarakhand government has inaugurated a three-day 'Nakshatra Sabha'. It was organised at George Everest peak in Mussoorie by the Uttarakhand Tourism Department in collaboration with an Astro tourism company, Starscapes.

It aimed at promoting astro tourism in the region. The event promised a comprehensive astro-tourism experience, featuring stargazing through specialised instruments, talks by experts, an astrophotography competition, and special solar observations.

#### HOW DELHI GETS ITS WATER

- Delhi gets most of its water from the Yamuna, Ravi-Beas, and Ganga rivers.
- Two channels entering Delhi from Haryana — the Carrier Lined Channel (CLC) and the Delhi Sub Branch (DSB) — supply Delhi with water from the Yamuna and Ravi-Beas rivers.
- The Delhi Jal Board (DJB) also takes water directly from the Yamuna to try and meet demand. Put together, Yamuna water — through the CLC, DSB and directly from the river — provides a supply of 612 MGD to Delhi.
- Finally, the DJB supplements its river-water supply with ground water — around 135 MGD of which are drawn from Delhi's tubewells and ranney wells.
- Across the states of Himachal Pradesh, Punjab, Haryana, and Delhi recorded large rainfall deficits from May 1 to 24, according to the India Meteorological Department (IMD). Scant rainfall



meant that the Yamuna simply did not have enough water for the DJB to draw from the Wazirabad reservoir, a DJB official explained.

— A water sharing agreement on the ‘surface flow’ of the Yamuna among Haryana, Uttar Pradesh, Rajasthan, Himachal Pradesh and Delhi in 1994, specified that Delhi is to get 0.076 billion cubic metres of water from March to June.

— The annual allocation for Delhi is 0.724 BCM. This amounts to roughly 435 MGD. This allocation is regulated by the Upper Yamuna River Board, with the 1994 agreement due for revision in 2025.

**For Your Information:**

— Delhi largely depends on its neighbouring states of Himachal Pradesh, Uttarakhand, Punjab, Haryana and Uttar Pradesh to meet around 90 per cent of its drinking water demand.

— According to the Delhi Jal Board (DJB), the capital’s raw water supply comes from four primary sources — 40 per cent from the Yamuna, sourced through Haryana; 25 per cent from the Ganga; 22 per cent from the Bhakra Nangal Dam and the remaining 13 per cent from subsurface sources such as Ranney wells and tube-wells. This water is treated at nine water treatment plants (WTP) and supplied across the city through a 15,473 km long pipeline network and underground water reservoirs.

— Water quality is also a concern in some areas, with high ammonia levels (over 2.5 ppm) and toxic waste from industrial drains contaminating the Yamuna.

— Many factors contribute to the perpetuation of this ever-expanding crisis, including the over-extraction of groundwater, pollution of water sources, growth of the migrant population, adverse impacts of climate change, inefficient water management practices, and inter-state water disputes.

**WHY IS THERE A FRESH ROW ON MULLAPERIYAR?**

**The story so far:**

The Expert Appraisal Committee (EAC) of the Ministry of Environment, Forest and Climate Change (MoEF) cancelled its May 28 meeting, which was supposed to consider Kerala’s request for a new Terms of Reference (ToR) for conducting an Environment Impact Assessment for a new dam at Mullaperiyar in Idukki district. The meeting was cancelled at the eleventh hour without assigning any reasons. The top officials of the Irrigation Design and Research Board of Kerala, who reached New Delhi for the meeting, were informed that the meeting had been deferred.

**Why was the meeting called?**

Any development related to the masonry gravity dam at Mullaperiyar, which is located in the Idukki district of Kerala and owned and operated by the neighbouring State of Tamil Nadu, is keenly contested by both States at all legal and governmental levels. The Kerala Government’s latest move to get a new ToR as part of the groundwork for constructing a new dam in place of the 128-year-old structure too invited a sharp response from Tamil Nadu.

Kerala decided to move the EAC for a new ToR for the new dam as the earlier one issued on November 14, 2018, with a lifespan of five years, had expired last year. The State needed a new



ToR for preparing the EIA to estimate the possible environmental impacts of the construction of a new dam.

**What is Tamil Nadu's objection?**

Kerala's move irked Tamil Nadu, which depends on the water released from the dam to irrigate its arid Theni, Madurai, Sivaganga and Ramanathapuram districts. Chief Minister M. K. Stalin shot off a letter to Bhupender Yadav, the Union Minister of the MoEF, seeking to issue directions to the officials of the Ministry and the Member Secretary of the EAC to drop the agenda of ToR from the meeting.

Tamil Nadu objected to the EAC agenda by arguing that the decision to consider Kerala's proposal amounted to a violation of an earlier order of the Supreme Court. Mr. Stalin stuck to the consistent position of Tamil Nadu that the existing dam was repeatedly found to be safe by various expert committees and the top court had passed orders to this effect on two occasions. Tamil Nadu went on to argue that the Supreme Court had specified in 2018 that its permission was required for any such studies. It also concluded that Kerala's decision to take up an EIA study for a new dam and the decision of the EAC to consider the request for permission would amount to contempt of the Supreme Court. The State government also dropped hints that it would initiate legal action, including filing contempt of court petitions if the orders of the top court were not adhered to on the issue.

**What is Kerala's position?**

The State argues that Kerala needs an extensive EIA considering the changed environmental scenario, especially the back-to-back floods in 2018 and 2019 as part of its preparatory works. A new data set covering various environmental aspects was needed, it argues. A new ToR and EIA are the prerequisites for such an exercise, according to Kerala officials.

The Kerala government, which has almost finalised the design of the new dam, refuses to buy the contentions of Tamil Nadu and argues that the apex court had earlier dismissed the Interlocutory Application (IA) of Tamil Nadu objecting to the earlier ToR for an EIA and the clearance issued by the National Board for Wild Life (NBWL) for conducting the EIA. Kerala officials argued that Tamil Nadu was misleading the Union government regarding the Supreme Court order on ToR. The IA filed by Tamil Nadu in 2015 requesting to issue directions to restrain Kerala from conducting EIA studies and withdrawing the NBWL order was dismissed by the Supreme Court as infructuous in an order issued on April 13, 2016, Kerala argues.

**Why does it want new terms of reference?**

According to Kerala officials, Kerala needs extensive data to prepare a Detailed Project Report (DPR) as part of its efforts to build a new dam and to engage Tamil Nadu in a discussion regarding the new dam. Kerala decided to seek a new ToR since changes were introduced in the dam design. The earlier design and the DPR prepared in 2011 had undergone major changes, they argue. The earlier estimated cost of the dam was around ₹800 crore, which in any case, would go up. An EIA is required as the proposed site of the dam is situated in Periyar Tiger Reserve, a notified Protected Area, where prior environmental clearances have to be obtained. The Periyar Tiger Reserve is both a tiger and elephant reserve, and the clearance of the NBWL is also required. Since the forest land has to be used for constructing the new dam, which is a non-forestry activity, and the felling of trees is required, the permission of the Union Ministry as well as the apex court has



to be obtained. The EIA of such activities will have to be documented while approaching various agencies for statutory clearance, they argue.

#### **Is there a scope for consensus?**

Kerala and Tamil Nadu have been engaged in a pitched legal battle since 1996. While the first phase of the legal contentions between the two States veered around the safety aspects of the existing dam, the second phase, which began in 1998 saw several Public Interest Litigations and writ petitions filed by both States challenging the legal validity of various acts of both the States. More legal battles may come up before the top court with this move of the Kerala government.

Kerala, which has been preparing the ground for a new dam, would require the consent of Tamil Nadu to construct a new dam as directed by the top court in one of its orders in 2014.

### **CITIES WARMING DUE TO EFFECT OF URBANISATION, CLIMATE CHANGE**

Recently, for two consecutive days, Delhi reported daytime temperatures above 50 degrees C, the highest ever recorded in the city. There is a reason why cities are experiencing higher temperatures than non-urban and rural areas. The ongoing climate change and rapid urbanisation are now defining the Anthropocene, with the cities experiencing both thereby making the urban population vulnerable to the compounding impact. India's urban landscape (especially population) is projected to double by 2050, adding more than 450 million residents. This rise outnumbers the present total population of the United States and the European Union, signaling a huge historical shift. Given the breakneck urbanisation, our cities must be prepared for future challenges.

The altered thermodynamic, and aerodynamic properties of the cities tend to trap more heat, making cities warmer than their rural and suburban counterparts, a phenomenon well-known as the urban heat island (UHI) effect. In addition, climate change is causing a significant increase in record-breaking temperatures and frequent prolonged heat waves. Therefore, the overall warming in any city tends to be complex with both urbanisation and global warming playing a pivotal role. This alters the resultant micro-climate of the cities with an influence on heat, rainfall distribution and even air pollution dispersion with implications for public health.

In a study published recently, we seek to separate the warming caused by local scale urbanisation and regional scale climate change in the context of 141 major cities in India and quantify their relative contributions. This kind of segregation is scientifically quite complex. One strategy is to determine the contributions of various factors to warming over time. These factors include information on concrete structures, roads, industries, parks, water bodies, residential activities, air conditioning, vehicular activities, and so on. Such detailed analysis requires enormous time, effort and investment, even for just one city and has to be incorporated into models or combined with extremely high-resolution satellite images for further analysis. A much simpler approach was followed using high-resolution night-time land surface temperature from MODIS, a sensor aboard Aqua satellite in NASA's A-train constellation. Under the assumption that the observed changes in warming (2003 to 2020) over the rural areas are driven primarily by regional climate change, the warming over the urban built-up areas for each city was compared to its rural counterpart at every one sq. km area. Thus, after the removal of regional warming signatures from the urban areas, the signal related to urbanisation was estimated for 141 major and minor cities providing first-time information on global warming-free urbanisation signatures.





Overall, the rate of warming in cities is near twice that of the rest of the country, with local-scale urbanisation alone causing additional warming of about 60%. While all cities showed an increase in night-time land surface temperature, with an average increase of 0.53 degree C per decade, a large divide among cities was seen. The tier-II cities in the eastern part of the country have stronger urbanisation-driven warming, surprisingly not seen even for the larger metros and mega cities. This may be indicating a window of opportunity.

India is aggressively acting to reduce emissions and shift to non-fossil fuel based energy sources as clearly stated in the updated nationally determined contribution (NDC) working towards climate justice. State level heat action plans and implementation of early warning and forecasting systems for heatwaves show India's commitment to saving lives by reducing heat related mortality.

Based on the predominant contribution to warming, the study emphasises that urban heat management must follow a differential approach for each city. Cities with a large urbanisation contribution may benefit from local scale interventions — use of sustainable materials like cool roofs and cool/permeable pavements, green infrastructures, creation of maintenance of lakes and parks, urban forests, and comprehensive emission reduction strategies. While other cities may require more regional scale efforts—national or regional level emission reduction, large-scale afforestation/plantation, rejuvenation of surrounding water bodies—for effective warming mitigation with both having implications for extreme urban rainfall, floods, air pollution, etc.

#### GLOBAL PROJECT 'PAINTS' EVIDENCE OF AIR POLLUTION IN INDIA

Researchers and artists have joined forces for an international project to make invisible air pollution in India visible, demonstrating the health risks posed to the population.

Combining digital light painting and low-cost air pollution sensors, the scientific team produced photographic evidence of pollution levels in cities across three countries — India, Ethiopia, and the U.K. — to spark debate among local communities.

Their findings, published in Nature Communications Earth & Environment on Wednesday, record how photographs taken as part of the 'Air of the Anthropocene' initiative stimulated discussion around the impact of air pollution.

The illustrations covered two children's playgrounds in India, 500 km apart — one in urban Delhi, the other in rural Palampur — with PM2.5 values at the Palampur playground at least 12.5 times less than those measured in Delhi.

Air pollution also varied dramatically between locations in Ethiopia — a kitchen using biomass stoves for food preparation had PM2.5 concentrations up to 20 times greater than an outdoor site nearby.

In Wales, large variations in air pollution around the Tata Steel Port Talbot steelworks were noted. Air quality monitoring and light painting at dusk in summer measured PM2.5 concentrations higher than the hourly average value.

Particulate matter, or PM, is the air pollutant most responsible for human morbidity and mortality. It has multiple impacts on physical health and is responsible for diseases, including heart disease, stroke, and cancers.



The “painting with light” team used low-cost air pollution sensors to measure PM mass concentrations. The sensors’ real-time signal was used to control a moving LED array programmed to flash more rapidly as PM concentration increased.

“By providing a visual understanding of air pollution that is accessible to people who don’t necessarily have a scientific background, the light painting approach can demonstrate that managing air pollution levels can have a significant impact on people’s day-to-day lives,” said Mr. Price.

Co-author Carlo Luiu, from the University of Birmingham, commented: “Thanks to the power of images, we can provoke people’s emotions — fostering awareness and prompting people to share their perspectives and take action to tackle air pollution.”

The Air of the Anthropocene project has been exhibited at gallery shows in Los Angeles, Belfast, and Birmingham.

#### RAILWAYS TO INSTALL OPTICAL FIBRE-BASED SYSTEM TO DETECT ELEPHANT CROSSING

The Railways will soon install an optical fibre-based intrusion detection system (IDS) along the elephant infested 33-km stretch between Kottekkad and Madukkarai to prevent elephant deaths on the tracks. The Southern Railway is installing the system for the first time after its successful implementation in the Northeast Frontier Railway (NFR).

Palakkad Divisional Railway Manager Arun Kumar Chaturvedi said the ₹15.4-crore work would be done on a war footing. “We expect to finish the work by this December,” Mr. Chaturvedi told The Hindu.

According to railway officials, the project is likely to be costlier as it involves laying of optical fibre cable along both sides of the A and B rail lines between Kottekkad and Madukkarai. In effect, the cable network has to be laid for about 130 km.

The optical fibre network will detect the presence of animals, big and small, through vibrations and send real-time alerts to the intrusion monitoring cell, stationmasters and loco pilots. “We will soon calibrate the signals for a variety of animals as well as vehicles. If it’s a deer, the signals will say it. And if it’s a jeep, it will be identified,” Mr. Chaturvedi said.

There will be no cameras for the IDS. It will rather be depending on acoustics and optics. The exact location of the encroaching elephants will be passed to loco pilots and stationmasters.

Ideally the cable has to be laid about 100 metres wide of the tracks on both sides. However, officials are worried about the lack of enough railway land. “If the fibre is laid close to the tracks, then loco pilots may not get enough time to respond to an alarm. Elephants sometimes step on to the tracks out of nowhere,” said Mr. Chaturvedi.

#### ARCHAEOLOGISTS, SANSKRIT SCHOLARS TIE UP TO DECIPHER RIGVEDA TEXT

Taking forward the research to potentially establish a relationship between the Harappan civilisation and the people of the Vedic age, a group of archaeologists are now collaborating with Sanskrit scholars to decipher the text of the Rigveda.



In an exclusive interview with The Hindu, Vasant Shinde, archaeologist and former Vice-Chancellor of Deccan College, Pune, said that a clear understanding of what is mentioned in the Rigveda text is important in order to correlate archaeological evidence unearthed by his team in excavations of Harappan settlements at Haryana's Rakhigarhi and Banawali, at Kalibanga on the Haryana-Rajasthan boundary, and at Dholavira in Gujarat.

The National Council of Educational Research and Training (NCERT) recently made a major addition to the Class 12 History textbook, Themes in Indian History Part 1, under a chapter titled Bricks, Beads and Bones — The Harappan Civilisation, based on DNA evidence from the 4,600-year-old remains of a woman, indicating that the Harappans were an indigenous people.

#### **More research needed**

Mr. Shinde's work is now focussed on testing the hypothesis that the Harappans and the Vedic people were the same. The NCERT has added a disclaimer in the textbook that more research is required to establish this relationship.

"While excavating the site of Rakhigarhi, we found evidence of ritual platforms and fire altars. Parallely, fire worship is mentioned in Rigvedic texts. We now need to get more understanding about what is mentioned in Rigvedic text, and how much of that can be correlated with archaeological evidence. We have not done this in great detail, but now we want to do it," Mr. Shinde said.

Currently, there is a debate about the period of origin of the Vedas, with one set of historians holding that the Vedas originated between 2,000 BC and 1,500 BC. However, another set of historians, including Mr. Shinde, believe that the Vedas date farther back to 2,500 BC — or 4,500 years ago. This would coincide with the age of the genetic evidence from the erstwhile Harappan woman's bone samples tested at the Rakhigarhi site.

Mr. Shinde argues that nobody knows when the Vedic texts were written, adding that people will only believe hypotheses if one has the archaeological evidence to prove or disprove them.

#### **A common thread**

"If you see description in Rigvedic text of the area where people lived, there is frequent description of the Saraswati river. The mention of the river is recorded at least 71 times in the Rigvedic text. During archaeological excavations, we discovered a majority of Harappan settlements along the banks of the Saraswati. Of the nearly 2,000 known Harappan settlements spread over the Indus basin and in Gujarat, almost two-thirds, at least 1,200, are located along the basin of the Saraswati," Mr. Shinde says.

Another point of reference which may link the Harappans with Vedic times is a set of animal bones found and studied by two archaeo-zoologists in the Surkotada region of Kutch, Gujarat. While a group of researchers from Hungary stated that these bones belonged to a proper domesticated horse, another group from Harvard University headed by Richard Meadow concluded that these were the bones of a wild ass.

Mr. Shinde says that this opens up a point of debate. "Those who believe that the Harappans and Rigvedic people are the same cite the Hungarian reference of the animal bones being that of a horse, as horses find mention in Rigvedic texts. However, those historians who date the Rigveda to after 2,000 BC, believe Richard Meadow's theory that the animal bones were that of a wild ass



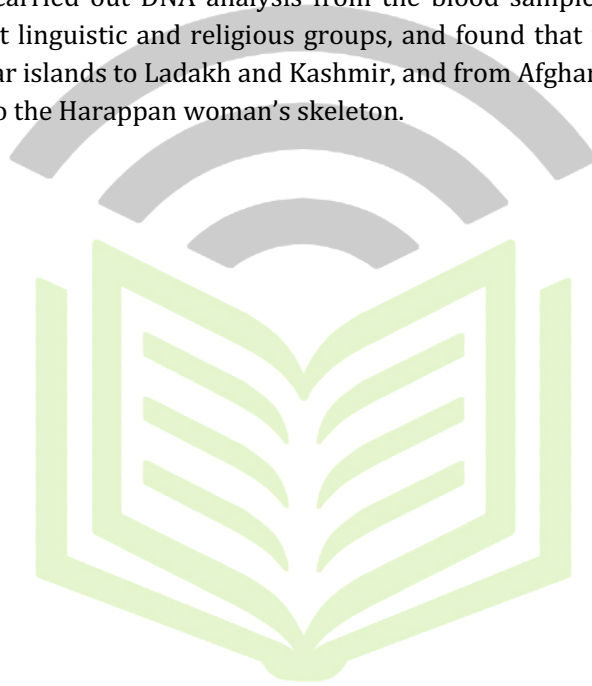
as some scholars say domesticated horses came to India only after 1,800 BC from Central Asia,” he says.

He further points out that some terracotta figurines of horse-like animals have been excavated from the Harappan sites of Lothal and Mohenjo-daro.

Contrary to the theory that there was a large scale immigration of Aryans from Europe to Central Asia and then to South Asia, the NCERT textbook revisions mention that the Harappans were indigenous to India, dating back to 10,000 BC.

#### **Genetic similarities**

Mr. Shinde’s group carried out DNA analysis from the blood samples of 3,000 modern South Asians from different linguistic and religious groups, and found that most of them — from the Andaman and Nicobar islands to Ladakh and Kashmir, and from Afghanistan to Bengal — carried genetic similarities to the Harappan woman’s skeleton.



# DreamIAS



## BUSINESS & ECONOMICS

### OPEC+ EXTENDS DEEP OIL OUTPUT CUTS INTO 2025

OPEC+ agreed on Sunday to extend most of its deep oil output cuts well into 2025 as the group seeks to shore up the market amid tepid demand growth, high interest rates and rising rival U.S. production.

— Brent crude oil prices have been trading near \$80 per barrel in recent days, below what many OPEC+ members need to balance their budgets. Worries over slow demand growth in top oil importer China have weighed on prices alongside rising oil stocks in developed economies.

— The Organization of the Petroleum Exporting Countries and allies led by Russia, together known as OPEC+, have made a series of deep output cuts since late 2022. OPEC+ members are currently cutting output by a total of 5.86 million barrels per day (bpd), or about 5.7% of global demand.

— OPEC+ will gradually phase out the cuts of 2.2 million bpd over the course of a year from October 2024 to September 2025.

#### **For Your Information:**

— Established in 1960 by founding members Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, OPEC has since expanded and now has 13 member states. With the addition of another 11 allied major oil-producing countries that include Russia, the grouping is known as OPEC+.

— India is the world's third-largest consumer of crude oil and depends on imports to meet over 85 per cent of its requirement. Given the country's extremely high import dependency, India's economy is highly sensitive to oil price volatility. Apart from inflationary pressures, high oil prices have implications for India's trade balance, foreign exchange reserves, the value of the rupee, and the overall health of the economy.

### INDIA'S RUSSIAN OIL IMPORTS AT 10-MONTH HIGH IN MAY, SUPPLIES FROM SAUDI ARABIA DWINDLE

India's Russian oil imports climbed to a 10-month high in May as low Russian refinery capacity use due to Ukrainian drone strikes made more of Moscow's oil available for the export market, as per oil tanker tracking data and industry experts. The rise in India's import of discounted Russian oil over the past few months has hit flows from Saudi Arabia the most, the data shows.

— Oil imports from Saudi Arabia—India's third-biggest source market for crude—declined almost 13 percent sequentially to 0.55 million bpd, the lowest since September of last year. The primary reason for the decline is seen as the ample availability of Russian crude, which continues to maintain a price advantage over Riyadh's oil.

— Supply of the medium-sour Urals crude—Russia's flagship crude grade and the mainstay of India's Russian oil purchases—to Indian refiners touched a record high in May at 1.53 million bpd, accounting for over 78 percent of India's Russian oil imports.

— May also marked a 10-month high in India's oil imports from the United States (US)—New Delhi's fifth-largest source of crude oil. Indian refiners imported a total of 0.21 million bpd of crude



from the US in May, 4.5 percent higher than the imports in April, and the highest since July of last year.

— In terms of market share, Russia accounted for almost 41 percent of the total 4.79 million bpd of crude oil imported into India in May.

— India's second-largest source of crude—Iraq—accounted for a fifth of New Delhi's oil imports in May, while Saudi Arabia's share was 11.4 percent.

— As the world's third-largest consumer of crude oil with a high import dependency level of over 85 percent, India is extremely sensitive to oil prices.

— Although trade sources have indicated that discounts on Russian crude have shrunk considerably over the past months, Indian refiners have evidently remained keen on buying Russian oil as given the high import volumes, even lower discount levels lead to significant savings.

**For Your Information:**

— Prior to the war in Ukraine, Iraq and Saudi Arabia were the top two suppliers of crude oil to India. But as the West started weaning itself off Russian energy supplies following Moscow's February 2022 invasion of Ukraine, Russia started offering discounts on its crude and Indian refiners started snapping up the discounted barrels.

#### WHAT GDP NUMBERS SAY

"India's GDP data was keenly awaited.., with a growth of 8.2 per cent in 2023-24 as against 7 per cent in 2022-23. It is to be noted that the growth in 2023-24 is much higher than MOSPI's second advance estimate of 7.6 per cent released in February. While overall GDP growth is impressive, it is important to understand some of the nuances of the data to infer the sustainability of the growth this year."

— While the fourth quarter growth has been strong at 7.8 per cent, there has been upward revision in the previous quarter numbers and that has strongly propped up the overall GDP growth for the year."

— "Another important point is the sharp divergence of 1 percentage point between GDP and GVA growth in 2023-24 as against 0.3 percentage point in 2022-23."

— "If we look at the sectoral break-up, as expected, overall agriculture value added growth has been muted, given the poor monsoon last year. Supported by lower input prices, manufacturing GVA has shown a healthy recovery..While services sector growth has been healthy at 7.6 per cent, there has been some moderation in the fourth quarter."

— "If we look at the break-up of GDP from the expenditure side, we find that the overall GDP growth is not very broad-based. Private consumption, the main pillar of the economy, has grown by a feeble 3.8 per cent in 2023-24. This is the slowest consumption growth rate in the last two decades (excluding the pandemic year contraction)...."

— "Investment, the other pillar of the Indian economy, has grown by a healthy 9 per cent. Investment in the economy has been mainly led by the government sector."



- “Exports, the third pillar of India’s economy, have been muted due to weak global growth. While India’s services exports have remained healthy, merchandise exports specifically felt the pinch of global slowdown.”
- “For the growth momentum to be sustained, the most critical aspect would be an improvement in private consumption...”
- “A pick-up in the private capex cycle is another important requirement for sustained growth momentum.
- “The other important factor to watch out for is developments in the global arena. With the global growth outlook improving, India’s exports are likely to improve. However, with geo-political tensions brewing, the risk of supply shocks continues to linger.”
- “In a nutshell, while the Indian economy has recorded impressive growth, there is a need to exercise caution and take some quick actions to ensure sustainability.”

#### FY24 FISCAL DEFICIT LOWER THAN RE AT 5.6%; SUBSIDIES DOWN SHARPLY

The Union government’s fiscal deficit for the last financial year came in at 5.6% of the Gross Domestic Product (GDP), lower than the revised estimate (RE) of 5.8%, on the back of better than anticipated revenues and some expenditure compression.

- For the current financial year the fiscal deficit target has been set at 5.1% of GDP. The fiscal consolidation path of the government has put the target of deficit below 4.5% by 2025-26.
- The performance on the tax and non-tax revenue front at the close of the year was better than even the revised estimates that were put out in February in the interim budget when the 10-month performance on the government income and expenditure was known. The biggest jump came in non-tax revenue receipts due to higher dividends.

#### GROSS GST COLLECTIONS UP 10% TO RS 1.73 LAKH CRORE IN MAY, GROWTH RATE MODERATES

Gross Goods and Services tax (GST) collections rose 10 per cent year-on-year to Rs 1.73 lakh crore in May (for sales in April), data released by the Finance Ministry on Saturday showed.

- The growth rate of GST collections moderated from over 11 per cent year-on-year rate seen during the last three months and is the lowest since June 2021. GST collections had hit a record-high level of Rs 2.10 lakh crore in April (for year-end sales in March).
- The rise in GST collections was mainly driven by a “strong increase in domestic transactions”, which increased by 15.3 per cent as against 13.4 per cent growth rate in April. However, the contribution from imports slowed as it contracted 4.3 per cent as against growth of 8.3 per cent seen a month ago.
- After accounting for refunds, the net GST revenue for May stood at Rs 1.44 lakh crore, up 6.9 per cent year-on-year but lower than Rs 1.92 lakh crore seen in April when it recorded an increase of 15.5 per cent.
- Cumulatively, the gross GST collections in FY25 till May stood at Rs 3.83 lakh crore, an increase of 11.3 per cent year-on-year growth, “driven by a strong increase in domestic transactions (up

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



14.2 per cent) and marginal increase in imports (up 1.4 per cent)", the Ministry said. After accounting for refunds, the net GST revenue in FY25 till May stood at Rs 3.36 lakh crore, a growth of 11.6 per cent compared to the same period last year.

— Tax experts said though the growth in tax collections has moderated, there is still firm growth from domestic supplies.

## JOURNEY TO 2047

The expectations of the people are clear, we want to become a developed country by 2047, that is, when India completes 100 years since Independence. But what does it mean to become a developed country?

— "International financial organisations currently classify countries with per capita income of \$13,845 and above as developed countries. In 2047, this would be higher. India's per capita income as of now is \$2,500 (IMF, April 2024), which shows the distance we have to travel."

— "The recent increase in the real GFCF rate has been largely due to an increase in government capital expenditures especially of the central government."

— "This growth in government capex cannot be sustained because it has been accompanied by a high fiscal deficit of the Centre, which was in the range of 6.7 percent, 6.4 percent, and 5.9 percent in the three post-covid years."

— "What is needed is a pickup in private investment by one to two percentage points of GDP."

— "After World War II, many East Asian countries adopted an export-led growth strategy and made rapid progress. Subsequently, China adopted a similar policy. China's share in world exports was 0.6 percent in 1970. By 2022, it went up to 11.9 percent. In contrast, although India's share in world exports was also 0.6 percent in 1970, it only increased to 2.5 percent by 2022."

— "Broadly speaking, the strategy should be multi-dimensional: Emphasise exports, services, manufacturing, agriculture etc. It would be useful to identify our "sunrise" industries."

— "Another critical issue is the creation of adequate jobs... In this context, the emergence of Artificial Intelligence (AI), Gen AI and machine learning is causing both alarm and excitement."

— "Considerations related to equity have assumed importance. The benefits of growth must be distributed equitably."

— "We cannot sequence growth and equity favouring growth first and equity later. Without growth, equity will be a distant dream. On the other hand, without equity, growth cannot be sustained. Equity also requires an emphasis on health and education as part of public expenditure in terms both of quantum and quality."

### For Your Information:

— "India's development strategy should be multidimensional. Growth may be stimulated by raising investment rates, emphasising manufacturing, services and exports, absorbing new technologies and promoting a mix of sectors that are employment-friendly."





## WHAT LOK SABHA ELECTION RESULTS COULD TELL ABOUT CONSUMPTION DIVIDE ACROSS INDIAN STATES

Economists at the public sector Bank of Baroda have published a report about the finances of Indian states for the financial year ended March (FY2024). The report analyses state-level finances based on three variables: how much money they raised on their own, how much they spent to boost productive capacities of the state, and how much they borrowed from the market.

### Fiscal Deficit

The report found that most states were able to limit their fiscal deficit (the amount of money they had to borrow to bridge the gap between expenses and income) within the budgeted levels (Chart). This is a significant achievement, since over-borrowing by states adds to the Centre's over-borrowings, and ultimately leaves less money for private sector firms to borrow.

Less investible funds imply higher borrowing costs for everything from home and car loans to factory loans. It is particularly noteworthy that large states such as Gujarat, Maharashtra, Odisha, and Tamil Nadu undershot their budgeted borrowings by over 30%.

### Capital spends

The second important finding was regarding capital expenditures (capex) by state governments. This is the kind of spending that goes into making productive assets such as roads and bridges, which boost economic activity in the state. Typically, when governments try to meet fiscal deficit targets, they tend to cut on capex, which in turn, tends to undermine the ability of the state economy to grow faster.

Taken together, states managed to spend only 84% of their capex budget. There were four outliers—Uttar Pradesh, Telangana, Bihar and Sikkim — that either spent the full amount or went beyond the target. Three states — Punjab, Chhattisgarh, and Nagaland — spent less than 50% of their capex budget.

### Tax revenues

A state's total tax revenues can be broadly divided into two heads: own tax revenues (OTR), and share in Union taxes.

The researchers found that overall, OTR accounted for around 61% of tax revenues of states. Within the OTR, GST (Goods and Services Tax) collections made up the biggest chunk (almost 32%), followed by state excise and sales tax (22%) and stamp and registration (7%).

A higher share of OTR helps a state to be more fiscally resilient. Telangana had the highest share of OTR in total tax revenue (82%), closely followed by Haryana (79%), Karnataka (78%), Kerala (77%), Maharashtra (73%), and Tamil Nadu (71%).

### Consumption divide

It is here that the analysis throws up some interesting data.

GST is a consumption-based tax — that is, it is paid at the point where a good or service is consumed. So, if a car is made in Tamil Nadu but bought in UP, then GST is levied and collected in UP.



As such, per capita GST collection can be used as a proxy for state-wise consumption patterns. Consumption levels, in turn, are a proxy for income levels. Although a proxy, this is the latest and actual observed all-India data as against the last consumption expenditure survey data from 2022-23, Madan Sabnavis, chief economist of Bank of Baroda, said.

“The distribution of per capita GST across states is a reflection of consumption taking place in the country,” the paper says. “...Higher consuming states end up paying higher taxes like GST and sales tax/ excise duty. Those [states] where consumption capacity is constrained have to depend progressively on more transfers from the Union taxes as directed by the Finance Commission.”

Table 2 shows the average per capita GST collection of the 25 states considered by the researchers was Rs 7,029. This level marks the point of division. If one considers only the bigger states (with at least 10 Lok Sabha seats) two divides are visible.

#### **Consumption and voting Table 2.**

**NORTH-SOUTH DIVIDE:** States in North India (highlighted in yellow) fall well below the national average, while states in the South (highlighted in green) pull up the national average. Per-capita GST levels in Karnataka or Telangana are almost 3-4 times that of Madhya Pradesh and Jharkhand, which shows the relative lack of prosperity of the average citizen in the latter states.

**EAST-WEST DIVIDE:** There is a divide between some of the big states in the East and West. Consumption levels in Maharashtra and Gujarat (in pink) are far in excess of those in Odisha, West Bengal and Assam (in blue).

There are some exceptions — such as Haryana in the North — but a broad divide is clearly visible.

#### **Political significance**

Counting of votes is scheduled for June 4, and the next five years are going to be critical for both the Indian economy as a whole, and for the way the economies of individual states perform.

As the political map stands today, the BJP-led NDA is on a relatively stronger footing in the lower-consumption (poorer) states of the North, while the Congress-led INDIA is relatively better placed in the higher-consumption states of the South.

This is interesting because the Congress is often seen as the more left-of-centre economic alternative while the BJP is pegged as the right-of-centre party. This perception centres mainly around the role of government that each coalition sees in the running of the economy.

The NDA, especially under Prime Minister Narendra Modi, has repeatedly said it wants “minimum government”, that is, to reduce the government’s involvement in the running of the economy. The INDIA bloc, on the other hand, has indicated a preference for bigger government, especially with its promises to recruit more people and provide a much bigger social safety net.

Despite its more conservative economic ideology, the BJP has implemented a wide range of social welfare measures, creating a class of labharthis that has paid significant electoral dividends. It is often argued that the BJP has been able to deliver social welfare more efficiently than the Congress and its allies, which has put it ahead in the poorer states.



The East-West divide is equally interesting. Here, the NDA-INDIA positions are reversed. So, the BJP has done better in the richer states (pink) while the opposition parties such as the Trinamool Congress and BJD have been ahead in the poorer states (blue).

Maharashtra in the West and West Bengal and Odisha in the East are key battleground states that will be closely watched on June 4. In the light of the research data summarised above, it will be interesting to see whether economic well-being is an important factor in the voting decisions made by the mass of electors.

## ROTI DAL SABZI AND THE GENERAL ELECTION

Among the many readings of Verdict 2024 is this one: The outcome, in many parts of the country, may have been shaped by economic issues like berozgari (unemployment) and mehengai (inflation) rising to the surface, and becoming salient. Of the two, the latter may have proved to be more decisive — Indian voters have historically blamed governments for inflation. They might be reconciled to working for low remuneration, but not to price rise significantly eating into their purchasing power. The average annual consumer price index (CPI) inflation in the 12 months from May 2018 leading to the 2019 election was just 3.3 per cent. It was even lower, at 0.03 per cent, for retail food inflation. Benign inflation provided an environment that was conducive to the Narendra Modi government's return to power by a thumping majority, bigger than in 2014.

It has been different in 2024. Overall CPI inflation has averaged 5.37 per cent year-on-year in the 12 months ended April, way above the Reserve Bank of India's (RBI) medium-term target of 4 per cent. It's been higher, at 7.88 per cent, for food inflation and even more in basic foods: Cereals (10.39 per cent), pulses (16.07 per cent) and vegetables (18.33 per cent). The price of roti-dal-sabzi would have arguably weighed much more on the ordinary voter's mind, than in 2019. The Modi government was, no doubt, alive to the situation, responding through supply-side measures — from allowing imports of major pulses and edible oils at 0-5 per cent duty and banning/restricting exports of wheat, non-basmati rice, sugar and onion to imposing stocking limits in wheat and pulses for traders and retailers. But a not-so-great agricultural production year in 2023-24, thanks to an El Niño-induced patchy monsoon, and supply disruptions from Covid and the Russia-Ukraine war before that, have contributed to durable inflationary pressures through much of the Modi government's second term.

The Modi-led National Democratic Alliance government, set to be sworn in by the weekend, will need to double down on inflation control. Imports of pulses and edible oils at zero/low duties should not only continue, but be extended to other agri-commodities such as wheat. The RBI, too, cannot cut its policy interest rates without anchoring of inflationary expectations — which, among Indian households, is clearly linked to the price of roti-dal-sabzi. A good monsoon — rainfall has been above-average so far and the Met Department expects it to sustain for the whole season (June-September) — should translate into a bountiful kharif harvest. Whether or not that happens, food inflation will probably present a big challenge for the new government.

## CONSUMPTION EXPENDITURE SURVEY 2022-23: HOUSEHOLDS SPENT MOST ON PROCESSED FOOD; HARYANA, RAJASTHAN SAW HIGHEST SPENDS ON MILK, KERALA ON MEATS

Households across the country's rural and urban areas spent the highest share of consumption expenditure on 'beverages, refreshments and processed food' among food items in 2022-23, but



some states bucked the trend in favour of other items — ‘milk and milk products’, and ‘egg, fish & meat’.

In rural areas among all major states, the households of Haryana spent the maximum on ‘milk and milk products’ at 41.7 per cent as a percentage of total expenditure on food, while Kerala spent the most on ‘egg, fish & meat’ at 23.5 per cent, detailed report of Household Consumption Expenditure Survey (HCES) 2022-23 released by Ministry of Statistics and Programme Implementation (MoSPI) on Friday showed.

The trend was not much different in urban areas — households in Rajasthan recorded the highest expenditure share on ‘milk and milk products’ at 33.2 per cent, only to be followed by Haryana (33.1 per cent) and Punjab (32.3 per cent). For ‘egg, fish & meat’, Kerala remained the state with the highest consumption spending among all major states with 19.8 per cent share out of total consumption expenditure on food.

‘Milk and milk products’ found favour over ‘beverages and processed food’ in total food expenditure in rural areas for other states also such as Rajasthan (35.5 per cent), Punjab (34.7 per cent), Gujarat (25.5 per cent), Uttar Pradesh (22.6 per cent) and Madhya Pradesh (21.5 per cent).

‘Beverages, processed food etc.’ accounted for the highest share in total food consumption for all other major states, with Tamil Nadu leading with the highest share in spending among states — 28.4 per cent in rural areas and 33.7 per cent in urban areas.

#### **Food items - urban Food items spending – urban**

In rural India, where food accounted for about 46 per cent of the households’ consumption spending, the contribution of ‘beverages, refreshments and processed food’ has been the highest (9.62 per cent), followed by milk and milk products (8.33 per cent) and vegetables (5.38 per cent). The share of cereals and cereal substitutes in the consumption spending on food items was about 4.91 per cent.

In urban India, the share of food in average monthly per capita consumption expenditure (MPCE) in 2022-23 was about 39 per cent. In line with rural areas, urban India also recorded the highest consumption spending on ‘beverages, refreshments and processed food’ with 10.64 per cent share followed by milk & milk products at 7.22 per cent and fruits and vegetables, each having a share of 3.8 per cent.

#### **Consumption spending on non-food items**

Among non-food items, households spent the most on conveyance in both rural and urban areas of almost all the major states. This was followed by durable goods and miscellaneous goods, entertainment. Medical expenses and spending on fuel & light also constituted a significant share of the expenditure by households on non-food items.

In rural India, the highest share of monthly per capita expenditure on ‘conveyance’ among non-food items was seen in Kerala (18.9 per cent), Tamil Nadu (18 per cent), Gujarat (16.6 per cent), Punjab (16.3 per cent) and Maharashtra (16 per cent). In urban areas, Kerala (16.6 per cent), Tamil Nadu (16.1 per cent), Chhattisgarh (16 per cent), Gujarat (15.7 per cent) and Rajasthan (15.6 per cent) were among the states with the highest share on conveyance as a percentage of expenditure on non-food items.



### **Non-food item spending - rural Consumption spending on non-food items – rural**

Medical expenses, which accounted for 13.3 per cent of the consumption expenditure among non-food items in rural areas, were seen to be the highest in Kerala (17.9 per cent), West Bengal (16.8 per cent) and Andhra Pradesh (16.6 per cent) as a percentage of the spending on non-food items. In urban India, West Bengal (15 per cent), Kerala (14.4 per cent) and Punjab (12.4 per cent) were among the states with the highest medical expenditure.

While the consumption expenditure on durable goods was the highest in Kerala in both rural and urban areas, the households in West Bengal and Odisha spent the highest on fuel & light in rural and urban areas, respectively.

### **Consumption spending on non-food items - urban Consumption spending on non-food items – urban**

Over the years, the consumption expenditure on non-food items has increased to over 50 per cent. As expenditure on food items fell for the first time to below 50 per cent of the total monthly consumption expenditure by a household in 2022-23, the resultant spending on non-food items has increased.

In numbers, the non-food spending in monthly per capita expenditure in rural areas increased to 53.62 per cent in 2022-23 from 47.1 per cent in 2011-12, 43.02 per cent in 2009-10, 46.89 per cent in 2004-05 and 40.6 per cent in 1999-2000. In urban areas, the share of non-food items in total expenditure was even higher than rural areas at 60.83 per cent in 2022-23, up from 57.38 per cent in 2011-12, 55.61 per cent in 2009-10. The share was 59.49 per cent in 2004-05 and 51.94 in 1999-2000.

The detailed report of the HCES survey has come three months after the release of a factsheet. The factsheet of the HCES survey report released earlier in February had shown that rural average monthly consumption spending per person increased to Rs 3,773 per month in 2022-23 from Rs 1,430 per person in 2011-12, a jump of 164 per cent. This is higher than the 146 per cent increase in urban average monthly consumption expenditure per person to Rs 6,459 in 2022-23 compared with Rs 2,630 per person in 2011-12.

## **OVER 1 LAKH FARMERS VOLUNTARILY GAVE UP THEIR PM-KISAN BENEFITS LAST YEAR**

Bihar, Uttar Pradesh and Rajasthan lead the chart of 1.16 lakh farmers who have voluntarily given up the benefits of the annual Rs 6,000 Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) scheme across the country from June 2023 to May 2024, according to data available with the Ministry of Agriculture & Farmers Welfare.

— Sources said the Agriculture Ministry had introduced a module in the PM-Kisan mobile app and website last year which enables farmers to voluntarily exit the scheme.

— Officials said the possible reasons for some farmers giving up the PM-Kisan benefits include: absentee landlords who may have decided against availing of the subsidy; land going to tax-paying descendants who are not eligible; change in the status of land-owners.

— The scheme was launched on February 24, 2019. The PM-Kisan is a Central Sector scheme with 100% funding from the Centre. The fund is directly transferred to the bank accounts of the beneficiaries.



— Under the PM-Kisan scheme, eligible farmer families receive Rs 6,000 per annum in three equated instalments through Direct Benefit Transfer (DBT) every four months.

#### FEWER WOMEN ARE BEING HIRED FOR LEADERSHIP POSITIONS

While representation of women across the workforce has increased over the years, LinkedIn's Economic Graph data show that progress has stalled since 2022 and declined in 2024. Also, the progress that was being made in promoting women to senior and leadership roles has stagnated in recent years.

Most women in senior positions are employed in sectors such as healthcare, education, administrative, and support services. The number of women employed across all positions is poor in the manufacturing, construction, oil and gas industries. LinkedIn found these trends from self-reported data by more than 1 billion members across 41,000 skills in 68 million companies and 1,35,000 schools globally.

Women's representation in the overall workforce increased from 23.9% in 2016 to 27.3% in 2022. It stayed the same in 2023 before decreasing to 26.8% in 2024. The 2024 data are based on the position of women in the month of January.

A similar trend was also seen in the representation of women in senior leadership positions. The promotion of women to higher roles has been snail-paced. It took four years (2016 to 2019) for the share of women in senior positions to go up by one percentage point and another four years (2019 to 2022) for it to go up by another point. If the downturn seen in January 2024 persists throughout the year, even this slow-paced increase will cease.

The stagnation in the share of women in senior positions and the dip in January this year can be attributed to the slowdown in fresh hires of women for leadership roles, data show. The share increased from 18.8% in 2016 to 25.2% in 2021 and declined after that. "LinkedIn Economic Graph data shows that despite progress, women still face obstacles in reaching leadership roles due to bias, societal norms, and structural barriers. However, recent focus on 'women-led development' has led to concerted efforts by both policymakers and business leaders to tackle these challenges," said Aditi Jha, LinkedIn India Board Member and Country Head, Legal and Government Affairs.

An industry-wide look at the share of women in senior leadership positions shows that even the gradual rise was limited to certain sectors. The entry and career progression of women were lowest in the oil, gas and mining, construction, utilities, wholesale, manufacturing, transportation and real estate sectors. In these sectors, there were just 11%-14% women in leadership roles. The oil industry had the lowest share of women in top positions — just around 11%.

In accommodation and food services, financial services, retail, technology, and media, the representation of women in senior roles was between 15% and 20%.

In administrative and support services, healthcare and hospitals, consumer services, government administration, and education, the share of women was between 22% and 30%. The share of women in senior positions was highest in the education sector (30%).

Data in the report also show that laws such as the Companies Act, 2013, which mandates women directors on company boards, are not being followed strictly. Between April 2018 and December 2023, 507 companies were fined for flouting this norm. Of them, 90% were listed companies.



## DOES INEQUALITY LEAD TO GROWTH?

Several argue that inequality harms democratic processes. Some inequality, others argue, is actually beneficial, since it acts as an incentive to entrepreneurs to start businesses, thereby increasing employment and welfare for others.

This view is mistaken, for inequality can have deleterious economic effects as well. Consider one form of inequality, that of concentration of monopoly power amongst capital relative to labour. This can have negative effects on consumption, welfare, and growth. If done properly, wealth taxes and distribution can have positive effects.

### **Monopoly power and consumption**

Billionaires draw their wealth from monopoly. Their business groups are dominant players in their specific market. This allows them to set prices instead of being determined by the market. The extent of mark-ups above the cost of production is determined by their monopoly power. Thus, for any given level of money wages, real wages — which determine purchasing power — are lower in economies with strong monopolies.

These monopoly effects are currently being experienced as the cost-of-living crises affecting the developed economies. The phenomenon of “greedflation”, or companies raising prices to increase profit margins in the wake of multiple demand-and-supply shocks due to the pandemic, has been pointed to as contributing to high rates of inflation in the West. Textbook economics shows us that the profit-maximising level of output under a monopoly is less than under a competitive economy, implying a welfare loss. Thus, the presence of monopolies can lead to lower real wages and lower levels of output and investment.

### **Inequality and growth**

Assume that a company decides to set up a new factory. Before the new capital stock is created, wages are paid out to workers to build it. The income of the workers is spent on purchasing goods, which increases the income of goods-sellers, whose increased income results in purchases of other goods, and so on. The total increase in the income of workers and goods-sellers is greater than the initial investment. This process is called the ‘multiplier’ effect, wherein investment raises incomes by a greater proportion than the initial investment.

When companies exercise market power, mark-ups and prices will be higher. Real wages of workers are lower, and they can only purchase lesser items. However companies, because of higher margins, will enjoy the same amount of profits from the sale of a lesser amount of goods. The increase in income from a given amount of investment will be lesser under monopoly because of reduced consumption power. Thus, investment will have a weaker effect on growth under monopoly while not affecting profits.

One can argue that consumption of the rich can help boost growth. While the absolute amount of consumption of the rich is more, they consume a smaller proportion of their incomes. The multiplier process depends on the proportion of consumption from incomes. An unequal economy will put lesser incomes in the hands of those with a greater propensity to consume, leading to weaker expansion in the economy.



### Redistribution and growth

Some argue that the 'cure' of redistribution can prove more harmful than the disease of inequality by affecting job creation. Entrepreneurs would see reduced incentives for amassing wealth under a high-tax regime, resulting in a scale-back of investment and jobs.

One must make a distinction between wealth and profits. Investment occurs under the influence of future profit expectations, while wealth is accumulated past profits. As the Polish economist Michal Kalecki argued, taxes on wealth would not affect investment since it leaves expectations of future profits unchanged. For example, taxing Gautam Adani's wealth will not affect investment since expected profits from airports depends on the demand for air-travel which is independent of the value of his wealth.

No doubt, the difficulty in converting profits into wealth may deter some business-owners from undertaking investment. But an economy with high expectations of profit would ensure businesses invest even if wealth is taxed. Redistribution can generate forces to spur growth even if some billionaires pull back on investment. For one, if wealth is redistributed and increases income, the multiplier process would become stronger. Businesses would be more willing to invest where purchasing power is strong. If monopolies are curtailed, then prices would be lower and real wages higher, leading to greater demand.

Consider Thomas Piketty's proposal of taxing billionaire wealth and providing basic income. This might cause some to exit the economy, but can create a new class of entrepreneurs who can create start-ups, freed from the necessity of working for wages. Redistribution is not a silver bullet, and too high a rate of taxation can become a net drain on an economy. Used in conjunction with other policy measures, curtailing inequality can lead to a healthier economy.

### RBI'S AGENDA: CAPITAL ACCOUNT LIBERALISATION, GLOBALISATION OF RUPEE AND DIGITAL PAYMENT SYSTEM

Gearing up to remain "future-ready for India's fast-growing economy", the Reserve Bank of India (RBI) has listed a series of aspirational goals, including capital account liberalisation and internationalisation of the Indian rupee (INR), universalising of digital payment system and globalisation of India's financial sector in a multi-year timeframe.

The central bank has proposed enabling availability of the rupee to non-residents for facilitating cross-border transactions in the rupee and enhancing accessibility of rupee accounts to persons resident outside India (PROIs). It has proposed adopting a calibrated approach towards interest-bearing Non-Resident Deposits and promoting Indian multi-national corporations (MNCs) and Indian global brands through overseas investments, according to 'Aspirational Goals for RBI@100 in a Multi-Year Time Frame' released by the central bank on Friday.

India has not yet opened up its capital account fully which will allow free flow of capital to the country and outside. The rupee was made full float in the trade account during the 1991 reforms initiated by the then government.

Capital account convertibility means the freedom to convert rupee into any foreign currency and foreign currency back into rupee for capital account transactions. The Tarapore committee had listed several preconditions such as fiscal consolidation, inflation control, low level of non-performing assets, low current account deficit and strengthening of financial markets for achieving capital account liberalisation.





The RBI working group, headed by RBI Executive Director Radha Shyam Ratho, had recently recommended a slew of short to long term measures to accelerate the pace of internationalisation of the rupee.

“As the Reserve Bank approaches its centenary year, RBI@100, it will gear up even more to remain future-ready for India’s fast-growing economy. It will take steps to enhance India’s global footprint. For our journey during the next decade, we have drawn up strategies consisting of policy actions towards positioning the Reserve Bank as a model central bank of the global south,” RBI Governor Shaktikanta Das said on Friday.

“This is not a static document as we are living in a dynamic world. Our endeavour will be to continually update it as may be required,” Das said.

Meanwhile, on deepening and universalisation of Digital payment systems domestically and globally, the RBI’s agenda includes plans for the internationalisation of India’s Payment Systems (UPI, RTGS and NEFT) and participation in payment systems linkage projects across countries – bilateral and multilateral. It has planned to increase the domestic usage of digital payments and phased implementation of Central Bank Digital Currency (e – Rupee).

On globalisation of India’s financial sector and financial sector reforms, RBI plans expansion of banking domestically in consonance with national growth and positioning 3-5 Indian banks among top 100 global banks in terms of size and operations. It plans to support International Financial Services Centres Authority (IFSCA) to make GIFT City a leading international financial centre.

The RBI has also proposed a review of monetary policy framework to address Balancing price stability, economic growth from an Emerging Market Economy (EME) perspective, refinements in monetary policy communication and spillovers to EMEs from private and public debt overhang in systemically important economies.

On dealing with climate change, the RBI plans guidance for regulated entities (REs) to stress test their asset portfolio to assess impact of climate change and strengthening payment systems’ resilience to climate risks. It also proposed climate risk disclosure norms for Res and inputs to the government for finalising taxonomy on climate risks.

For the short term, the RBI working group has suggested adoption of a standardised approach for examining the proposals on bilateral and multilateral trade arrangements for invoicing, settlement and payment in the rupee and local currencies, encouraging the opening of the rupee accounts for non-residents both in India and outside India and integrating Indian payment systems with other countries for cross-border transactions. It suggested strengthening the financial market by fostering a global 24×5 rupee market and recalibration of the FPI (foreign portfolio investor) regime.

Over the next two to five years, the RBI group recommended a review of taxes on rupee masala bonds, international use of Real Time Gross Settlement (RTGS) for cross-border trade transactions and inclusion of Indian Government Bonds in global bond indices.

**RBI PLANS NEW DIGITAL PLATFORM TO CHECK PAYMENT FRAUD RISKS**

The Reserve Bank of India has proposed to set up a Digital Payments Intelligence Platform which will harness advanced technologies to mitigate payment fraud risks.



To take this initiative forward, the RBI has constituted a committee, under the Chairmanship of A.P. Hota, former MD & CEO, NPCI, to examine various aspects of setting up a digital public infrastructure for the platform. The committee is expected to give its recommendations within two months.

Domestic payment frauds jumped by 70.64 per cent to Rs 2,604 crore during the six-month period ended March 2024 from Rs 1,526 crore in the same period of last year. The volume of frauds also rose to 15.51 lakh during the March 2024 period from 11.5 lakh in the previous six-month period, RBI data shows.

“The regulatory measures like setting up of digital payments intelligence platform will harness advanced technologies to mitigate fraud risks,” said SBI Chairman Dinesh Khara.

**Bulk deposits limit raised:** The Reserve Bank has proposed to revise the definition of bulk deposits as ‘single rupee term deposits of Rs 3 crore and above’ from the current limit of Rs 2 crore and above for commercial banks (excluding RRBs) and small finance banks. It has also proposed to define the bulk deposit limit for local area banks as ‘single rupee term deposits of Rs one crore and above’ as applicable in the case of regional rural banks (RRBs).

Banks have discretion to offer differential rate of interest on the bulk deposits as per their requirements and Asset-Liability Management (ALM) projections. The bulk deposits limit was enhanced to Rs 2 crore in the year 2019.

**Automatic e-mandate:** Under the e-mandate framework for recurring transactions, the RBI has decided to introduce an automatic replenishment facility for such payments. The automatic replenishment will be triggered when the balance in Fastag or NCMC falls below a threshold amount set by the customer.

The current e-mandate framework requires a pre-debit notification at least a 24-hours before the actual debit from customer’s account. It has proposed to exempt this requirement for payments made from customer’s account for automatic replenishment of balances in Fastag or NCMC under the e-mandate framework.

**UPI Lite e-mandate:** The RBI has decided to bring UPI Lite within the ambit of the e-mandate framework by introducing an auto-replenishment facility for loading the UPI Lite wallet by the customer, if the balance goes below a threshold amount set by him/her. The UPI Lite facility currently allows a customer to load his UPI Lite wallet up to Rs 2000 and make payments up to Rs 500 from the wallet.

“Since the funds remain with the customer (funds move from his/her account to wallet), the requirement of additional authentication or pre-debit notification is proposed to be dispensed with,” the RBI said.

**Export, import norms to be revised:** The Reserve Bank has decided to rationalise existing guidelines on export and import of goods and services in line with the changing dynamics of cross-border trade transactions globally. The proposed rationalisation aims to simplifying operational procedures thereby promoting ease of doing business for all the stakeholders.



## SIX PSU BANKS ISSUED 1,071 LOOK-OUT CIRCULARS AGAINST DEFAULTERS IN LAST 5 YEARS

In their bid to recover money stuck with absconding wilful defaulters, six public sector banks (PSUs) have issued 1,071 look-out circulars (LOCs) since 2018 to prevent them from fleeing to other countries, according to their replies to the Right to Information (RTI) requests filed by The Indian Express.

The State Bank of India (SBI), the largest commercial bank in the country, said as many as 583 LOCs were issued by the bank. While RTI applications were filed with 11 PSU banks, three banks — Canara Bank, UCO Bank and Bank of Baroda (BoB) — refused to give the data and Bank of Maharashtra did not reply to the application even after a month. Reply from Indian Bank is awaited.

After SBI, Union Bank of India, Punjab National Bank (PNB) and Indian Overseas Bank (IOB) issued 260, 131, and 42 LOCs, respectively. Bank of India also issued 42 LOCs and Central Bank of India 13 circulars.

However, on April 23, the Bombay High Court (HC) held that public sector banks do not have powers to recommend or request the central government for issuance of LOCs against default borrowers who are Indian citizens or foreigners under the office memoranda (OM) of the central government.

LOCs issued by PSU banks belonged to the wilful default category. Banks have categorised 17,713 accounts involving loans of Rs 353,129 crore in the wilful default category as of December 2023. Banks were given permission to seek LOCs after a bevy of defaulters from Vijay Mallya, Nirav Modi to Jatin Mehta of Winsome Diamonds fled abroad after defaulting thousands of crores of rupees.

When asked about the identity of the defaulters against whom LOCs were issued, SBI said, “the information cannot be provided as per section 8(1) (e) & (j) of the RTI Act 2005, being third party personal information available with the bank in fiduciary capacity.” Other five banks also gave a similar reply on the identity of defaulters. “Banks issued LOCs against defaulters who refused to respond to bank notices and were suspected to be absconding or planning to flee or fled abroad after taking substantial loans. It’s the depositors’ money. We have to recover these loans,” said an official of a PSU bank.

The LOC circulars were amended from time to time and in September 2018, a new ground was introduced to issue LOC in the ‘economic interest of India,’ that restrained a person from travelling abroad if his or her departure was detrimental to economic interest of the country. Another clause was introduced later, empowering the Chairman of SBI and the managing director and chief executive officer of all other PSUs to request immigration authorities to issue LOCs.

The LOCs were issued by the Bureau of Immigration of the Union Ministry of Home Affairs (MHA) that allow the authorities at any port of departure — mainly airports — to prevent a person from travelling outside India. The LOCs were issued based on a series of OMs or circulars of the ministry since October 27, 2010.

The SBI alone has classified 2,048 accounts relating to Rs 81,673 crore as wilful defaults. Punjab National Bank has 2,279 wilful defaults for Rs 43,112 crore and Union Bank 1,967 accounts for Rs 37,241 crore.



As per the Reserve Bank of India classification, a 'wilful default' would be deemed to have occurred if the borrower has defaulted in meeting their repayment obligations to the lender even when they have the capacity to honour the obligations.

A wilful default happens when the borrower has not utilised the finance from the lender for the specific purpose for which finance was availed, and has diverted the funds for other purposes, or siphoned off funds, or disposed of or removed the movable fixed assets or immovable property given for the purpose of securing a term loan without the knowledge of the bank.

Bombay HC said while OMs of the central government were not ultra vires the Constitution or 'per se arbitrary', the subsequent empowerment of bank managers of PSUs to issue LOCs was arbitrary. "We do not expect public sector banks to do this (issue LOCs)," the bench said. The HC passed a judgment in a batch of petitions and set aside the LOCs issued to restrain persons indebted to public sector banks from travelling abroad. The HC said that the Bureau of Immigration will not act on the said LOCs. The bench also held that the fundamental right to travel abroad cannot be curtailed by executive or controlling statute.

## AN UNHEALTHY CREDIT SCORE CAN IMPACT FINANCIAL FUTURE

Maintaining a healthy credit score is a crucial financial habit, but is often ignored. This lack of awareness coupled with poor credit behaviour leads to a poor credit score, which can have serious repercussions on your financial future.

As lenders consider credit score as one of the key deciding factors while processing your application for a loan, an unhealthy credit score will make it very difficult for you to access credit. What is an unhealthy credit score? Credit score is a three-digit number ranging between 300 and 900, representing creditworthiness on the basis of credit history.

It is measured by credit-information companies or credit bureaus. When you apply for any kind of loan or credit card, lenders check your credit score, to assess repayment behaviour. A credit score of more than 750 is generally considered to be a high score and is a reflection of a responsible borrower with excellent credit history. It is preferred by most lenders and credit card issuers. Consumers with a healthy credit score benefit from ease of access, wide choice of offers to compare and choose, best interest rates and other favourable terms and conditions.

A score in the range of 700 to 750 is considered a good score too, but may not be eligible for the best offers from lenders. Credit score between 600 and 700 is considered to be an average score and reflects credit behaviour in the past has not been good. Very few lenders are likely to approve a loan application for consumers in the average zone.

Any score below 600 is considered a poor credit score and it's unlikely any lender will offer you a loan.

### **Fraud impacts score**

Do note a low score can also be a result of fraudulent activities or erroneous errors in your credit report. To avoid situations where score has plummeted because of frauds or errors, check your credit report regularly, at least once a quarter, and take immediate action if you notice any discrepancy, by raising a dispute with the credit bureau. It's critical that those who are below the healthy credit score bracket work on their credit score and improve it, to avoid challenges in accessing credit in the future.



### **What is the impact of an unhealthy credit score on your finances in future?**

Lenders may outrightly reject credit applications of applicants with poor credit scores and such applicants might not get any unsecured loan.

Loan rejections are also reported in the credit report, and can in fact further lower your score. If you have a poor score and in need of immediate funds, try to opt for a secured loan such as gold loan or loan against property instead of unsecured personal loans. Some lenders might still approve credit applications of applicants with average to good credit scores.

### **Financial crisis**

But these loans would come at unfavourable terms for borrowers and a high cost, as the lender is likely to charge a significantly higher interest rate and in some cases, also approve a lower loan amount. A low score often leads to a financial crisis when one is short of funds in case of emergencies like a medical exigency. The inability to take a loan can also adversely impact your financial goals like buying a home. On the other hand, consumers with a strong credit score are the most preferred applicants for lenders. They are likely to get loans at the best interest rates, and sometimes with low or no processing charges.

### **Improving the score**

Improving your poor credit score is not an overnight process, it requires consistently responsible credit usage over a period to boost your credit score. Hence, it is better to take timely necessary measures to improve the credit score. The most important aspect is to pay your EMIs and credit card bills in full on time. You should also avoid behaviour that's a reflection of overdependence on credit, like making too many applications for loans or credit cards in a short span of time or maxing out your credit cards regularly.

### **Pending dues**

You should check if the poor score is a result of an old credit account that may not have been closed, and has had pending dues for long. This can bring down your score drastically. Get in touch with the concerned lender immediately and take necessary steps to close the account. So, if your credit score is not in the healthy range, it is important for you to take proactive steps to build your score. Improving your credit score now would make it easier for you to access credit in the future and help in case of financial emergencies and fulfilling crucial life-goals.

## **INVESTING IN PPF: BENEFITS**

For most individuals, Section 80C of the Income-Tax Act is the primary means for saving taxes. Individuals typically avail benefits under Section 80C by investing in provident fund (PF), public provident fund (PPF) and equity-linked savings scheme (ELSS). Previously in this column, we discussed why investing in PPF and PF is more optimal than investing in ELSS. In this article, we discuss how to structure your investment in PPF.

### **Compounding returns**

There are two advantages associated with PPF investment. One, interest earned on the investment is exempt from tax. Second, interest is compounded, but the investment does not eliminate reinvestment risk. This is the risk you will be forced to reinvest annual interest at a lower rate if interest rate declines.



### Bank deposits

Take bank recurring deposit and cumulative fixed deposit. The interest prevailing at the time of initiating the deposit is locked-in through the life of the deposit. So, these two kinds of deposit eliminate reinvestment risk. Interest rate on PPF is reset quarterly.

So, PPF investment will earn lower return if interest rate declines, exposing you to reinvestment risk. The comforting factor is you do not have to look for avenues to reinvest. The accrued interest is automatically reinvested into your PPF account.

## WHAT GRADE OF COAL DOES INDIA PRODUCE?

### The story so far:

A recent report by the Organized Crime and Corruption Reporting Project, a venture backed by billionaire hedge fund manager and philanthropist, George Soros, furnished new documents to allege that in 2014, the Adani Group claimed 'low grade' coal, imported from Indonesia, to be 'high-quality' coal, inflated its value and sold it to Tamil Nadu's power generation company, TANGEDCO (Tamil Nadu Generation and Distribution Company).

### What is 'high grade' and 'low grade' coal?

High and low quality are relative terms and only meaningful in the context of where the coal is used and how they are processed. The Gross Calorific Value (GCV), or the amount of heat or energy that can be generated from burning the coal, determines the gradation of coal. Coal being a fossil fuel is a mixture of carbon, ash, moisture and a host of other impurities. The higher the available carbon in a unit of coal, the greater is its quality or 'grade.' There are 17 grades of coal by this metric from grade 1, or top quality coal, with a kilo of it yielding higher than 7,000 kcal, and the lowest producing anywhere between 2,200-2,500 kcal, as per a classification by the Coal Ministry. However, the calorific value is not a useful metric on its own. The most important uses of coal are in running thermal power plants or powering a blast furnace to produce steel and both require different kinds of coal. 'Coking' coal is the kind needed to produce coke — an essential component of steel making — and thus requires minimal ash content. Non-coking coal, despite its ash content, can be used to generate enough useful heat to run a boiler and turbine.

### What are the characteristics of Indian coal?

Indian coal has historically been evaluated as being high in ash content and low in calorific value compared to imported coal. The average GCV of domestic thermal coal ranges from 3,500-4,000 kcal/kg compared to imported thermal coals of +6,000 kcal/kg of GCV. Also the average ash content of Indian coals is more than 40% compared to imported coal which has less than 10% ash content. The consequence of this is that high-ash coal when burnt results in higher particulate matter, nitrogen and sulphur dioxide. Given this, the government, since 1954, has controlled the price of coal in a way that power companies were disincentivised to use high-grade coking coal for power generation.

Thus in the pursuit of balancing India's needs for coal production, power plants and pollution, the government has recommended the use of imported coal with lower ash and moisture content. The Central Electricity Authority (CEA) in 2012 recommended, and which still stands, that about 10-15% blending of imported coal can usually be safely used in Indian power boilers, which are designed for low quality Indian coal.



### What is clean coal?

Broadly, we get clean coal when the carbon content has been increased by reducing its ash content. Coal plants have 'washing plants' on site which can process the coal in ways that reduce ash and moisture content. They employ huge blowers or a 'bath' to remove fine, coarse ash. However, deploying such equipment is expensive and adds to the cost of power. The other method to clean coal — again requiring significant investment — is coal gasification. Here, the need to directly burn coal is bypassed by converting it into gas. By relying on an integrated gasification combined cycle (IGCC) system, steam and hot pressurised air or oxygen combine with coal in a reaction that forces carbon molecules apart. The resulting syngas, a mixture of carbon monoxide, hydrogen, CO<sub>2</sub> and water vapour, is then cleaned and burned in a gas turbine to make electricity. Since IGCC power plants create two forms of energy (steam from the gasification process apart from syngas as fuel), they increase efficiency of the coal used.

### What is the future of coal in India?

Official data says that India in 2023-24 produced 997 million tonnes of coal, an 11% growth over the previous year. Most of this was produced by the state-owned Coal India Ltd and its subsidiaries.

As of March 2024, India produced 261 million tonnes of coal, of which 58 million tonnes was coking coal. Despite stated commitments to transition India's electricity sector away from fossil fuel, coal is the mainstay of India's energy economy. Change, however, is in the air as for the first time this year, renewable energy accounted for 71.5% of the record 13.6 GW power generation capacity added by India in the first quarter of this year, while coal's share (including lignite) of total power capacity dropped below 50% for the first time since the 1960s.



# DreamIAS



## LIFE & SCIENCE

### JWST SPOTS OLDEST GALAXY YET, FROM COSMIC DAWN

By peering across vast cosmic distances, JWST is looking way back in time, observed the galaxy as it existed about 290 million years after the Big Bang event that initiated the universe roughly 13.8 billion years ago, the researchers said. This period spanning the universe's first few hundred million years is called cosmic dawn.

The telescope has revolutionised the understanding of the early universe since becoming operational in 2022. The new discovery was made by the JWST Advanced Deep Extragalactic Survey (JADES) research team.

This galaxy, called JADES-GS-z14-0, measures about 1,700 lightyears across. It has a mass equivalent to 500 million stars the size of our Sun and was rapidly forming new stars, about 20 every year.

Before JWST's observations, scientists didn't know galaxies could exist so early, and certainly not luminous ones like this.

"The early universe has surprise after surprise for us," said astrophysicist Kevin Hainline of Steward Observatory at the University of Arizona, one of the leaders of the study published online this week ahead of formal peer-review.

"I think everyone's jaws dropped," added astrophysicist and study co-author Francesco D'Eugenio of the Kavli Institute for Cosmology at the University of Cambridge. "JWST is showing that galaxies in the early universe were much more luminous than we had anticipated."

Until now, the earliest-known galaxy dated to about 320 million years after the Big Bang, as announced by the JADES team last year.

"It makes sense to call the galaxy big, because it's significantly larger than other galaxies that the JADES team has measured at these distances, and it's going to be challenging to understand just how something this large could form in only a few hundred million years," Mr. Hainline said.

While it is quite big for such an early galaxy, it is dwarfed by some present-day galaxies. Our Milky Way is about 100,000 light years across, with the mass equivalent to about 10 billion Sun-sized stars.

Star formation in the early universe was more violent than today, with massive hot stars forming and dying quickly, and releasing tremendous amount of energy through ultraviolet light, stellar winds and supernova explosions, Mr. D'Eugenio said.

Three main hypotheses have been advanced to explain the luminosity of early galaxies. The first attributed it to supermassive black holes in these galaxies gobbling up material. That appears to have been ruled out by the new findings because the light observed is spread over an area wider than would be expected from black hole gluttony.





## SUNITA WILLIAMS

Indian-origin astronaut Sunita Williams flew to space for the third time on May 5th, along with fellow astronaut Butch Wilmore, marking a historic milestone as the first members aboard Boeing's Starliner spacecraft.

This 25-hour flight to the International Space Station (ISS) also saw Wilmore and Williams become the first astronauts to be launched on an Atlas V rocket.

Williams made history as the first woman to embark on such a mission, adding to her already impressive list of achievements.

In 2012, during a prior trip to the ISS, Williams became the first person to complete a triathlon in space. She simulated swimming using a weight-lifting machine and ran on a treadmill while strapped in by a harness to prevent floating away.

## THE SUN NEVER STOPS SHINING

### **Q: How can the sky glow even after sunset?**

The sun may have set from our perspective — but hasn't yet from the perspective of the upper atmosphere.

The Sun still shines at the atmosphere, but at a sharp angle beneath the horizon. In this hour, we see the sky glow because molecules in the air scatter these sunlight in different directions, including ours. This is also why the evening sky appears red at the horizon.

Both this effect and the sky being blue-hued in daytime is the result of Rayleigh scattering — the scattering of sunlight by particles in the air that are much smaller than the light's wavelength.

As the Sun continues to set, a smaller amount of sunlight strikes the upper atmosphere. Nightfall truly kicks in only when the Sun is at least around 18 degrees beneath the horizon.

The arrival of daylight happens in a similar process, in reverse. When the Sun is at least 18 degrees below the horizon in the east, the sky starts to turn reddish again near the horizon. When the star's position crosses the horizon (as seen by the observer), daylight breaks out and the day begins.

The sky can appear to glow even after the Sun has dipped 18 degrees below the horizon, due to other sources of light. These include the scattering of starlight by the atmosphere and — increasingly — light pollution.

## TONGA VOLCANO COULD CAUSE UNUSUAL WEATHER FOR REST OF DECADE: STUDY

Usually, the sulphur dioxide in the smoke of a volcano cools the earth's surface for a short period. Hunga Tonga was an underwater volcano, so it produced little smoke and a lot of water vapour, which shot into the stratosphere. And in the stratosphere, water vapour is a potent greenhouse gas.

Hunga Tonga-Hunga Ha'apai (Hunga Tonga for short) erupted on January 15, 2022, in the Pacific Kingdom of Tonga. It created a tsunami, which triggered warnings across the entire Pacific basin, and sent sound waves around the globe multiple times.



A new study published in the Journal of Climate explores the climate impacts of this eruption.

Our findings show the volcano can explain last year's extraordinarily large ozone hole as well as the much wetter than expected summer of 2024.

The eruption could have lingering effects on our winter weather for years to come.

### **A cooling smoke cloud**

Usually, the smoke of a volcano — and in particular the sulphur dioxide contained inside the smoke cloud — ultimately leads to a cooling of the earth's surface for a short period. This is because the sulphur dioxide transforms into sulphate aerosols, which send sunlight back into space before it reaches the surface. This shading effect means the surface cools down for a while, until the sulphate falls back down to the surface or gets rained out.

This is not what happened to Hunga Tonga.

Because it was an underwater volcano, Hunga Tonga produced little smoke, but a lot of water vapour: 100–150 million tonnes, or the equivalent of 60,000 Olympic swimming pools. The enormous heat of the eruption transformed huge amounts of sea water into steam, which then shot high into the atmosphere with the force of the eruption. All that water ended up in the stratosphere: a layer of the atmosphere between about 15 and 40 kilometres above the surface, which produces neither clouds nor rain because it is too dry.

Water vapour in the stratosphere has two main effects. One, it helps in the chemical reactions that destroy the ozone layer, and two, it is a very potent greenhouse gas.

There is no precedent in our observations of volcanic eruptions to know what all that water would do to our climate, and for how long. This is because the only way to measure water vapour in the entire stratosphere is via satellites. These have only existed since 1979, and there hasn't been an eruption similar to Hunga Tonga in that time.

### **Follow the vapour**

Experts in stratospheric science around the world started examining satellite observations on the first day of the eruption. Some studies focused on the more traditional effects of volcanic eruptions, such as the amount of sulphate aerosols and their evolution after the eruption, some concentrated on the possible effects of the water vapour, and some included both.

But nobody really knew how the water vapour in the stratosphere would behave. How long will it remain in the stratosphere? Where will it go? And, most importantly, what does this mean for the climate while the water vapour is still there?

Those were exactly the questions we set out to answer.

We wanted to find out about the future, and unfortunately, it is impossible to measure that. This is why we turned to climate models, which are specifically made to look into the future.

We did two simulations with the same climate model. In one, we assumed no volcano erupted, while in the other one we manually added the 60,000 Olympic swimming pools worth of water vapour to the stratosphere. Then, we compared the two simulations, knowing that any differences must be due to the added water vapour.



### What did we find out?

The large ozone hole from August to December 2023 was at least in part due to Hunga Tonga. Our simulations predicted that ozone hole almost two years in advance.

Notably, this was the only year we would expect any influence from the volcanic eruption on the ozone hole. By then, the water vapour had just enough time to reach the polar stratosphere over Antarctica, and during any later years, there would not be enough water vapour left to enlarge the ozone hole.

As the ozone hole lasted until late December, with it came a positive phase of the Southern Annular Mode during the summer of 2024. For Australia, this meant a higher chance of a wet summer, which was exactly opposite what most people expected with the declared El Niño. Again, our model predicted these two years ahead.

In terms of global mean temperatures, which are a measure of how much climate change we are experiencing, the impact of Hunga Tonga is very small, only about 0.015 degrees Celsius. (This was independently confirmed by another study.) This means that the incredibly high temperatures we have measured for about a year now cannot be attributed to the Hunga Tonga eruption.

### Disruption for the rest of the decade

But there are some surprising, lasting impacts in some regions of the planet.

For the northern half of Australia, our model predicts colder and wetter than usual winters up to about 2029. For North America, it predicts warmer than usual winters, while for Scandinavia, it again predicts colder than usual winters.

The volcano seems to change the way some waves travel through the atmosphere. And atmospheric waves are responsible for highs and lows, which directly influence our weather.

It is important here to clarify that this is only one study, and one particular way of investigating what impact the Hunga Tonga eruption might have on our weather and climate. Like any other climate model, ours is not perfect.

We also didn't include any other effects, such as the El Niño–La Niña cycle. But we hope that our study will stir scientific interest to try and understand what such a large amount of water vapour in the stratosphere might mean for our climate.

Whether it is to confirm or contradict our findings, that remains to be seen — we welcome either outcome.

## WORLD ENVIRONMENT DAY

World Environment Day (WED) is observed annually on June 5th as a significant international event dedicated to raising awareness about environmental issues and promoting sustainable practices. This year, the Kingdom of Saudi Arabia had the honour of hosting the 2024 Environment Day celebration.

The theme for WED 2024 is “Our Land, Our Future, We Are Generation Restoration,” with a focus on land restoration, desertification, and drought resilience.



The establishment of the United Nations General Assembly on June 5, 1972, marked the inception of WED, aiming to raise awareness and promote action for environmental protection. Each year, a different theme is chosen to spotlight various environmental challenges.

The United Nations General Assembly declared the decade from 2021 to 2030 as the UN Decade on Ecosystem Restoration.

#### CLIMATE CONFERENCE IN NOVEMBER TO EMPHASISE 'PEACE' AND 'TRUCE'

The annual climate conference to be held here in November will lay particular stress on “peace” and “truce” to enable countries to focus on climate solution amid ongoing conflicts, a top adviser to the Azerbaijan government said at a media briefing this week.

The 29th edition of the Conference of Parties (COP) — as the climate conference is called — is set to further agenda points decided in the 28th edition in Dubai such as a firm commitment to “transition away from the use of fossil fuels...in a just, orderly and equitable manner, and accelerating action in this critical decade, to achieve net zero by 2050.”

The choice of Azerbaijan as the host means that it will preside over COP-29 proceedings and try to steer countries into achieving consensus on addressing the climate crisis. Most countries have agreed on the urgency of the problem and the need to keep temperatures from rising 1.5C above pre-industrial levels by the end of century.

A long-standing criticism and a matter of deep division between developed and developing countries is that a 2009 commitment by developed countries to mobilise \$100 billion a year between 2020 and 2025 for developing countries has only been partially realised. A major item that is expected to be firmed up in 2024 is to decide a new annual target above \$100 billion and agreement on whether these will be in the form of grants or loans.

However, deliberating on all these would require an atmosphere of peace. “We are now seeing that geopolitically the world is in a Cold War-like situation,” said Hikmet Hajiyev, top adviser to Azerbaijan President, Ilham Ayilev, “The world is divided but Azerbaijan’s position is that the climate issue is something different. Countries can be on different sides on geopolitical matters but climate affects everybody and needs an inclusive process. So, we are proposing a COP-truce. During the COP [meet], all cannons should stop.” He said this in reference to the Russia-Ukraine war

Mr. Hajiyev said he had sounded out the UN on this and as an example he highlighted the recent cessation of hostilities between Azerbaijan and Armenia.

#### CLIMATE CHANGE: NEPAL’S HONEY GATHERERS SAY FEWER HIVES THREATEN TRADITION

Now the generations-old craft is increasingly under threat as some experts say rising temperatures brought by climate change disrupt the growth of bees, the availability of their food, and even pollination of plants.

— For generations, the Gurung community in Taap, about 175 km (110 miles) west of the capital, Kathmandu, and other villages in the nearby districts of Lamjung and Kaski, have scoured the steep Himalayan cliffs for honey.



— The honeycomb extract, also known as ‘mad honey’, for some intoxicating qualities that can cause hallucinations, sells for 2,000 Nepali rupees (\$1.5) a litre, but the villagers rule out overharvesting as a reason for falling collections.

— Some experts blame climate change, driven by a global rise in temperatures, as a major factor in the decline, but other contributors are deforestation, diversion of water from streams and rivers for hydroelectric dams, and use of pesticides.

— Temperatures in the Himalayas, home to the planet’s tallest peaks, range higher than an average global increase of 1.2 degrees Celsius (2.2 degrees Fahrenheit) above pre-industrial levels, United Nations data and independent research show.

— Global studies show that a temperature rise of even one degree affects the growth of bees, the availability of their food, and cross-pollination of plants, said Suruchi Bhadwal of India’s Energy and Resources Institute (TERI).

— Research showed climate change was disrupting the food chains for bees and the flowering of plants, affecting populations of both across the world, added Bhadwal, the head of earth science and climate change at the institute.

**For Your Information:**

— The last decade has seen bee populations declining twice as fast, coupled with the rise of the Colony Collapse Disorder – a phenomenon whose cause is being attributed to certain chemicals in fertilizers interfering with the bees internal navigation system. Each of these have contributed to a drastic decline in global bee populations.

— As the world’s second-largest producer of fruits and vegetables, bees are vital for the nation’s economic performance as well. A study by a team from the University of Kolkata, assessed the effect of pollination on five different crop productions and found that the annual loss can be estimated to be \$726 million – thus the effects of a loss in bees would also lead to a shortfall in agricultural produce as well.

**CARNIAN PLUVIAL EPISODE: BOUNTY IN RAIN**

**WHAT IS IT?**

The earth’s climate has always been in flux. There have been ice ages, periods of scorching deserts, even seemingly endless rain.

Some 230 million years ago, during the late Triassic Period, it rained for more than a million years straight. Researchers call this slice of time the carnian pluvial episode. And right after this episode, the age of the dinosaurs began. While it wasn’t as major an event as, say, any one of the planet’s five mass extinctions, the carnian pluvial episode certainly altered the path of evolution of both terrestrial and marine flora and fauna.

The world’s landmasses in the late Triassic consisted of the supercontinent Pangaea. Scientists have suggested that the heavy downpour was the result of volcanic activity in the Wrangellia Province, which is in the present day on the western coast of North America. This volcanic activity is expected to have wiped out approximately a third of marine life and a substantial amount of terrestrial life — but which, according to evidence scientists have found, the carnian pluvial episode may have turned around for the better.



During and after the episode, the number and diversity of species increased. Many of them played and continue to play an important role in the way the earth looks today.

#### ROMAN BATHS MAY HARBOUR NOVEL ANTIMICROBIAL NATURAL PRODUCTS

The world-famous Roman Baths are home to a diverse range of microorganisms which could be critical in the global fight against antimicrobial resistance, a new study suggests. The investigation of extreme ecological niches, such as hot springs, has gained recent interest due to their unique ecosystems, increasing the chance for novel antimicrobial natural product discovery. The study, published in the journal *The Microbe*, is the first to provide a detailed examination of the bacterial and archaeal communities found within the waters of the popular tourist attraction in the city of Bath (U.K.).

Scientists collected samples of water, sediment and biofilm from locations within the Roman Baths complex including the King's Spring (where the waters reach around 45 degree C) and the Great Bath, where the temperatures are closer to 30 degree C. The samples were then analysed using cutting edge sequencing technology and traditional culturing techniques were employed to isolate bacteria with antibiotic activity.

Around 300 distinct types of bacteria were isolated across the Roman Baths site with different examples being more prominent within the varying water temperatures. Further tests showed 15 of these isolates—including examples of Proteobacteria and Firmicutes—showed varying levels of inhibition against human pathogens including *E.coli*, *Staphylococcus Aureus* and *Shigella flexneri*.

“From initial isolation experiments, 297 isolates were purified, of which 15 showed broad spectrum activity against human pathogens, though interestingly these were not from target genera in the Actinobacteria. From these data, there is clear potential for novel antimicrobial natural products discovery from the Roman Baths, as has been demonstrated from other thermal hot springs globally,” the authors write.

The research comes at a time when the need for new sources of antibiotics is at unprecedented levels, with resistance of bacteria to currently used medication estimated to be responsible for more than 1.25 million deaths globally each year. The researchers say a significant amount of additional investigation is required before the microorganisms found in the Roman Baths can be applied in the fight against disease and infection globally. However, they add that this initial study has shown there is clear potential for novel antimicrobial natural products contained within its hot springs to be explored further for that purpose.

#### THE BACTERIA THAT WRITE NEW GENES TO COPE WITH INFECTIONS

Amid the unprecedented challenges presented by the COVID-19 pandemic, a once obscure enzyme found itself in the spotlight: reverse transcriptase. As laboratories worldwide rushed to develop reliable diagnostic tests, techniques using the enzyme became the gold standard to detect the SARS-2 virus, and a cornerstone of molecular diagnostics. This remarkable enzyme not only facilitated rapid and accurate testing; along with another powerful approach — genome-sequencing — it also helped track the virus's spread, paving the way for surveillance, better public healthcare, and vaccine development.



The discovery of reverse transcriptase is a story unto itself. Researchers in the labs of Howard Temin and David Baltimore independently discovered it and published their findings in back-to-back articles in the journal *Nature* in 1970. In his paper, Dr. Baltimore suggested that in the vesicular stomatitis virus, a protein called RNA polymerase was involved in reverse-translating RNA to DNA.

### **A molecular biology revolution**

The discovery was transformative. The prevailing belief at the time was that in all living beings, hereditary information flowed only from DNA to RNA and from RNA to protein (a.k.a. the 'Central Dogma'). The discoveries of Drs. Temin and Baltimore et al. showed information could flow the other way, too, with RNA giving 'rise' to DNA. The name "reverse transcriptase" was, however, coined by the editor of *Nature*, in an article discussing the significant advance in an accompanying column.

The discovery's impact was also immediate. The ability of cells to create DNA copies from RNA revolutionised research methods in molecular biology, where researchers could reverse-transcribe messenger RNAs to pieces of DNA, clone that DNA into bacterial vectors, and study the function of the corresponding genes. In diagnostics, clinicians used reverse transcriptase to convert RNA to DNA and thus estimate the amount of viral material in a given sample. This technique quickly found wide application and use in the study of RNA viruses, including hepatitis B and the human immunodeficiency virus (HIV).

Indeed, the discovery of reverse transcriptase had a significant effect on the management and treatment of HIV infections, including Acquired Immunodeficiency Syndrome (AIDS), in the 1980s. A generation of antiviral agents that specifically targeted the reverse transcriptase enzyme helped convert an otherwise deadly disease to one that could be managed, translating to improving the long-term outcomes and survival of people living with AIDS.

Subsequent studies of the reverse transcriptase enzyme since the 1970s led to mechanistic insights into how viruses use this enzyme to replicate, as well.

### **Retroelements in the human genome**

Reverse transcriptases also had a significant role in shaping the human genome.

The human genome is interspersed in many places with sequences, called elements, that appear to have originated from retroviruses. Thus, researchers call them retroelements. Evolutionary biologists believe these retroelements to have been transferred horizontally during the course of millions of years of evolution. (Horizontal gene transfer refers to genes 'jumping' between organisms rather than from parent to offspring.) And until recently, researchers also considered them to be "junk" elements: they were repeated through the genome and they seemingly did not confer any function to the human organism.

However, recent evidence has suggested that these retroelements could really have had a profound impact on human biology and evolution, and that they play important roles in a variety of physiological processes. In a recent paper in the journal *Nature Communications*, researchers extensively studied the expression of genes in different parts of the human brain from post-mortem brain samples. They reported that the expression of more than a thousand human endogenous retroviruses — a major class of retroelements in the human genome — could be associated with a risk of neuropsychiatric diseases in humans.



Retroelements in the human genome and bacterial reverse transcriptases have a common evolutionary history as well as share functional mechanisms. Bacterial reverse transcriptases — believed to be the precursors of their eukaryotic counterparts — exhibit analogous mechanisms. The discovery of reverse transcriptase activity across the different domains of life underscores the enzyme's fundamental role in both prokaryotic and eukaryotic systems as well as a remarkable evolutionary continuity and functional versatility.

#### How do Klebsiella create genes?

Researchers widely believed that bacterial reverse transcriptases were the precursors of their eukaryotic counterparts. They discovered the first reverse transcriptase in bacteria in 1989, with papers published back to back in the journals *Science* and *Cell*. In bacteria, as in the case of humans, retroelements are categorised as belonging to three broad groups: the Group II introns, the retrons, and the diversity generating retroelements.

In a preprint paper uploaded to the bioRxiv preprint server on May 8, researchers at Columbia University in New York, led by Stephen Tang and Samuel Sternberg, suggested that when the bacteria *Klebsiella pneumoniae* is infected by bacteriophages — viruses that infect bacteria — they use a non-coding RNA with specific motifs (or structures) that could bind to reverse transcriptase and instruct cells to create DNA. This DNA copy has multiple copies of a gene that can create a specific protein.

The researchers dubbed this protein 'Neo' for "never-ending open-reading frame". It could place the bacterial cell in a state of suspended animation, blocking its replication, and thus stalling the replication of the invading bacteriophage as well. Thus, the infection is stopped in its tracks.

Recent discoveries — including the role of reverse transcriptase in bacterial defence against bacteriophages — hint at the potential of innovative applications in biotechnology and medicine, especially in the context of emerging antimicrobial resistance, the ability of disease-causing microbes to resist the effects of substances designed to incapacitate or kill them. Further exploring reverse transcriptases could also reveal novel mechanisms of genetic evolution and viral resistance, potentially leading to new therapeutic strategies and biotechnological tools.

### IN FIGHT AGAINST NIPAH, SCIENTISTS FIND NEW WAY TO GENERATE VIRUS-LIKE PARTICLES IN LAB

Scientists at the Institute of Advanced Virology (IAV) at Thonnakkal here have developed a novel way of generating non-infectious Nipah virus-like particles (VLPs) in the laboratory, which mimic the wild-type Nipah Virus (NiV).

This method offers a safe and effective alternative platform for developing neutralising antibodies against the NiV in a biosafety level-2 (BSL) laboratory. The IAV team has thus come one step closer to its mandate for developing monoclonal antibodies and anti-virals against the NiV and similar pathogens.

The zoonotic virus Nipah is a highly pathogenic paramyxovirus, with a fatality rate of up to 80% in affected humans. Yet, research studies have been limited because of the extreme level of biosafety precautions required for handling this BSL-4 pathogen.

Virus neutralisation assays are critical for the development and evaluation of vaccines and immunotherapeutics, and for conducting basic research into the immune response and





pathogenesis of NiV. These tests, which traditionally require to be done in high-security labs with the infectious organism, can now be done safely in BSL-2 labs in the country using the NiV-VLPs, Director of IAV E. Sreekumar says.

## ICMR SEEKS TO PROVIDE ORAL FORMULATION OF HYDROXYUREA TO TREAT SICKLE CELL DISEASE

India has the highest prevalence of sickle cell disease in South Asia. Over 20 million people with the disease live in the country. While most pharmaceutical companies in India market 500-mg capsules or 200-mg tablets of hydroxyurea, the biggest challenge in treatment is that it is not available in the suspension form for effective use in the case of paediatric patients, the ICMR said.

Sickle cell disease is one of the most common monogenic disorders of haemoglobin, and hydroxyurea, a myelosuppressive agent, is an effective drug for treating patients of sickle cell disease, and thalassemia.

### **Risk of low dose**

The ICMR said that since only high-dosage hydroxyurea tablets are available, initiating a low-dose treatment becomes a tedious task for service providers, as the capsule or tablet has to be broken down appropriately to be administered in accordance with body weight, risking the efficacy available with measured doses.

“Thus, there is a need for paediatric formulation of HU (hydroxyurea), considering the number of SCD cases in India and in view of the launch of the National Mission to eliminate Sickle Cell Anaemia/SCD (by 2047),” it said.

The ICMR, which is the apex biomedical research body in the country, also said that in India, according to the National Health Mission’s guidelines, healthcare providers initiate hydroxyurea therapy to only symptomatic sickle cell disease patients among children both because of the lack of availability of paediatric doses as well as the fear of toxicity.

In children, the prescribed dose is 10 mg to 15 mg per kilogram of body weight after two years of age. This titration of dose is difficult, and currently, it is carried out by using a fraction of the broken capsules, which is not an appropriate method because it can lead to less accurate administration of the drug, which has five dose-related side-effects.

### **Titration of drug**

With the availability of a formulation, the titration of the drug can be better, and its dose-related side effects can be reduced.

The council said that it could enter into any form of exclusive or non-exclusive agreement with eligible manufacturing companies for joint development and commercialisation of paediatric oral formulations of hydroxyurea for sickle cell disease.

## MAJOR CAUSE OF INFLAMMATORY BOWEL DISEASE DISCOVERED

An autoimmune disease, such as IBD, which encompasses Crohn’s disease and ulcerative colitis, presently affects approximately 5% of the world’s population and one in every 10 people in the United Kingdom. These diseases are also becoming increasingly widespread, with over half a



million individuals in the U.K. living with IBD by 2022, nearly double the previous prediction of 300,000.

Despite increasing prevalence, current treatments do not work in every patient and attempts to develop new drugs often fail due to our incomplete understanding of what causes IBD.

Researchers at Francis Crick Institute, in collaboration with UCL and Imperial College London published their findings in Nature. Scientists at the Crick journeyed into a ‘gene desert’ — an area of DNA that doesn’t code for proteins — which has previously been linked to IBD and several other autoimmune diseases.

They found that this gene desert contains an ‘enhancer’, a section of DNA that is like a volume dial for nearby genes, able to crank up the amount of proteins they make. The team discovered that this particular enhancer was only active in macrophages, a type of immune cell known to be important in IBD, and boosted a gene called ETS2, with higher levels correlating with a higher risk of disease.

Using genetic editing, the scientists showed that ETS2 was essential for almost all inflammatory functions in macrophages, including several that directly contribute to tissue damage in IBD. Strikingly, simply increasing the amount of ETS2 in resting macrophages turned them into inflammatory cells that closely resembled those from IBD patients.

The team also discovered that many other genes previously linked to IBD are part of the ETS2 pathway, providing further evidence that it is a major cause of IBD.

Specific drugs that block ETS2 don’t exist, so the team searched for drugs that might indirectly reduce its activity. They found that MEK inhibitors, drugs already prescribed for other non-inflammatory conditions, were predicted to switch off the inflammatory effects of ETS2.

The researchers then put this to the test, and discovered that these drugs not only reduced inflammation in macrophages, but also in gut samples from patients with IBD.

As MEK inhibitors can have side effects in other organs, the researchers are now working with LifeArc to find ways to deliver MEK inhibitors directly to macrophages.

James Lee, Group Leader of the Genetic Mechanisms of Disease Laboratory at the Crick, and Consultant Gastroenterologist at the Royal Free Hospital and UCL, who led the research, said: “IBD usually develops in young people and can cause severe symptoms that disrupt education, relationships, family life and employment. Better treatments are urgently needed.

**NOW, WEIGHT LOSS DRUG SEMAGLUTIDE CAN LOWER RISK OF KIDNEY DISEASE BY 24 PER CENT**

The popular diabetes and weight-loss drug semaglutide — sold under the brand names Ozempic and Wegovy — has now been proven to reduce the risk of kidney disease and its complications among people with diabetes. A recent study has found that it could reduce the risk of major kidney events, onset of dialysis, or transplantation by 24 per cent and all-cause mortality by 20 per cent.

The study tracked 3,500 people with diabetes who had chronic kidney disease (CKD). “This is the kind of evidence that cannot be ignored. Semaglutide injectables are likely to be included as another treatment option for those with CKD in international advisories. This is an important trial — it will give more hope to patients with the disease and it will provide us with another medicine

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



in our arsenal,” says Dr Anoop Misra, chairman of Fortis C-Doc Centre of Excellence for Diabetes, Metabolic Diseases and Endocrinology.

#### **What is CKD?**

CKD is a chronic condition that leads to a gradual loss of kidney function — its ability to filter out waste. The disease usually leads to a buildup of fluids and waste in the body. Eventually, it leads to kidney failure, requiring either regular dialysis or a kidney transplantation.

#### **How does a weight-loss drug help with kidney disease?**

The drug works by reducing the known risk factors for complicating CKD like uncontrolled diabetes and obesity. There are also multiple tissue-based mechanisms that the drug works on, including decreasing inflammation, oxidative stress and fibrosis (hardening of the tissue). There could also be some other mechanisms that directly impact the kidney which we don't know about.

The prevalence of CKD may be very high in nearly 40 to 50 per cent of elderly people with diabetes. It may range between 10 to 20 per cent among younger people with uncontrolled diabetes, hypertension and obesity. The prevalence is likely to be negligible among the young with well-managed diabetes.

#### **What are the treatments available for CKD?**

There is no cure for the condition. All treatments focus on slowing the damage and delaying the last stages. The problem is that there are very few things we can do to treat it. Of course, lifestyle changes to control blood pressure, diabetes and other risk factors will help. When it comes to medicines, a few years ago, there was only one hypertension drug that could be used for kidney disease called Angiotensin receptor blockers (ARBs). Over the last two to three years, another class of diabetes drugs — SGLT2 — and Finerenone have been shown to slow down progression of CKD as well as cardiovascular diseases. Now, we have a fourth drug.

#### **What are the precautions that one needs to take?**

While semaglutide, and other diabetes and weight-loss medicines in the category are known to cause gastrointestinal symptoms, these symptoms may be more harmful in patients with kidney disease. Common side effects like vomiting, nausea and dehydration can exacerbate kidney disease. Therefore, it is more important for kidney disease patients to consult a doctor if these symptoms persist.