AMRITA IAS

Union Cabinet clears two-year service extension for Agniveers, opens path to regular service

Saurabh Trivedi
NEW DELHI

The Union Cabinet has approved an additional two-year engagement period for a section of Agniveers, creating a pathway for all cadets under the Agnipath scheme to join the armed forces as regular soldiers, subject to their willingness and fulfilment of selection criteria.

Significant revision

The move marks a significant revision of the original Agnipath framework, under which only up to 25% of each batch of Agniveers were eligible for retention in the regular cadre after four years, while the remaining personnel were to be released from service. Under the revised arrangement, 25% of Agniveers will continue to be offered regular employment while the remaining 75% would be given an opportunity to serve for another two years, following which they would be eligible for consideration for enrolment as regular soldiers, Chief of Defence Staff, General N.S. Raja Subramani, told mediapersons on Wednesday.

The second engagement period will come with higher remuneration, an enhanced Seva Nidhi package, and seniority benefits.

Career trajectory

The revised arrangement creates a pathway for all Agniveers to eventually become regular soldiers

- 25% of Agniveers to be offered regular employment on the basis of merit, as envisaged under the Agnipath scheme
- Remaining 75% to get opportunity for a 2-year extension and subsequent enrolment

Performance review

The decision follows an assessment of the performance of Agniveers in terms of organisational requirements and operational efficiency.

The evaluation found that they had demonstrated outstanding performance in skills, motivation, physical fitness and technological prowess, according to the government, he added.

The additional engagement period was approved on the recommendations of the three services following an elaborate evaluation and feedback process, the Chief of Defence Staff added.

CONTINUED ON
» PAGE 10
ADDRESSING DISCONTENT
» PAGE 10

Agniveers get option for service extension

The objective is to align the aspirations of Agniveers with the operational requirements and organisational efficiency of the armed forces, the Defence Ministry said.

The government said a detailed assessment of the Agnipath scheme after four years of implementation had brought out several achievements, including a wider geographical footprint of recruitment across districts, a more standardised and transparent recruitment process, and high levels of physical fitness, morale, motivation, competitive spirit and discipline among Agniveers.

GS 3: Internal Security

Key Pointers:

- What is the major change in the Agnipath scheme?
- What benefits will Agniveers receive during the extended engagement?

Falling fertility has made laws penalising violation of two-child norm outdated: SC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Wednesday held that laws penalising having more than two children have lost their relevance due to the falling fertility rate in India.

"We are of the strong opinion that laws that penalise having more than two children have lost their relevance. The foundation of such laws, that is, the fear of overpopulation, has crumbled due to demographic changes in the past few decades," a Bench headed by Justice P.S. Narasimha observed.

The court said its 2003 judgment (in *Javed v. State of Haryana*) which upheld such penal laws, needed a revisit by a larger Bench.

India's Total Fertility Rate (TFR) had fallen from 3.02 to 1.9. A TFR of 2.1, known as the replacement rate, would allow one generation to completely replace itself.

"Even though India's population is not yet declining, the TFR falling below the replacement rate will soon result in a demographic transition towards an older population with a declining share of the working-age population. Therefore, laws aimed at limiting population growth have now lost their significance," Justice Narasimha observed.

The 2003 judgment had referred to the situation that existed in China as of 2000 and drew inspiration from the measures that it had undertaken to control the population.

Healthy growth

"The earlier perception that population has a negative impact on development does not hold water any more. Rather than society and the courts being concerned about the negative consequences of high population, it should instead focus on the need to encourage a healthy growth of population," the judgment, by a Bench including Justice Alok Aradhe, said.

The judgment pointed out that the share of persons aged 60 and above had risen from about 8.3% in 2014 to 9.7% in 2024, and government projections place that share at nearly 15% by 2036.

India's falling fertility rate, the court said, would necessarily mean a smaller proportion of younger persons in the future. The court said the failure to take notice of demographic changes would lead to only serious consequences. Failure to adapt not only produced injustice, but was also an abuse of power.

The judgment was based on a petition filed by Mangala Bhimrao Ingle, whose election as sarpanch of the Kakoda gram panchayat in Maharashtra was set aside on the ground that she had more than two children.

CONTINUED ON
» PAGE 10

Two-child norm outdated, says SC

Justice Narasimha found such laws linking motherhood to political representation a violation of Article 21 (right to life) under the Constitution.

"Allowing such laws to stand excludes an entire class of citizens from political representation on grounds bearing little rational connection to their capacity to hold public office. It compels an unconscionable choice between bearing children and democratic participation, impinging on the right to reproductive autonomy under Article 21," Justice Narasimha observed. Seeking an immediate re-visitation of the 2003 judgment, the court permitted the appellant to continue in her elected position while staying proceedings against her.

GS 2: Governance

Key pointers:

- What is TFR?
- Javed v. State of Haryana case
- How do two-child norm laws affect fundamental rights?
- What is the constitutional concern raised by the Supreme Court?

AMRITA IAS

Apex court seeks response from Union govt. on pleas challenging lifelong legal immunity to CEC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Wednesday sought a response from the Union government on petitions challenging the constitutionality of a specific provision in the Chief Election Commissioner-Election Commissioners' appointment law which grants them blanket, lifelong immunity from any legal action or criminal prosecution, not only during the official tenure but even after retirement.

A Bench headed by Chief Justice of India Surya Kant issued notice to the Centre and the Election Commission of India (ECI) on petitions filed by RJD MP Manoj Jha, represented by Tanya Srivastava; and advocate Arun Kumar Agrawal, represented by advocate Neha Rathi, challenging Section 16 of The Chief Election Commissioner And Other Election Commissioners (Appointment, Conditions Of Service And Term Of Office) Act, 2023.

The court listed the petitions on December 18.

The petitions said the Section was unconstitutional, went beyond the ambit of powers given to the ECI and, significantly, violated the Basic Structure of the Constitution. "Section 16 of the Act bars jurisdiction of Constitutional courts and interferes with the power of judicial review, held to be a part of the Basic Structure of Constitution," they submitted.

Ms. Rathi submitted that a plain reading of the provision showed a bar on any court to entertain or continue any civil or criminal proceedings against "any person who is or was a Chief Election Commissioner or an Election Commissioner for any act, thing or word, committed, done or spoken by him when, or in the course of acting or purporting to act in the discharge of his official duty or function".

GS 2: Polity

Key Pointers:

- Section 16 of the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023
- Functions of ECI
- What is the constitutional significance of judicial review?

Helping hand

States need help to rebuild public infrastructure after damage in cyclones

Long-term preparedness and a swift response by authorities minimised casualties when the back-to-back cyclones Arnab and Murasu hit two places of the Andhra Pradesh coast. In Andhra Pradesh, damage from Cyclone Arnab, which made landfall on October 28 was estimated at roughly ₹4,526 crore. Initial estimates of the damage by Cyclone Murasu, which crossed the coast on November 3, indicate that about 52,500 hectares of standing crops were affected. The State reported seven deaths from the two cyclones. The first cyclone damaged nearly 90,000 hectares of standing crops in southern parts of Odisha. After preliminary on-the-spot assessment of flood-hit areas, the Union government is expected to soon release the first instalment of funds to the affected States. Personnel from Karnataka, Telangana and Tamil Nadu have also gone to the rescue of Andhra Pradesh.

The deployment of the Real Time Governance Society (RTGS) and other technologies has significantly reduced human casualties and property damage. During Cyclone Hudhud in October 2014, Andhra Pradesh reported 63 deaths and damage estimated at nearly ₹22,000 crore. As natural disasters become more frequent in India, greater collaboration is needed between higher learning institutions, especially in science and technology, and central and State government agencies. Authorities must develop an effective compensation framework for saving crops/crop losses. The Pradhan Mantri Fasal Bima Yojana, a crop insurance scheme that was launched by the Union government a decade ago, has not provided farmers with comprehensive safety cover, as they suffer due to the vagaries of nature. The Union government should improve the scheme so that all farmers are encouraged to bring their crops under the scheme, while State governments should raise awareness about the insurance scheme and support agriculturists by topping up benefits that are under the insurance cover. The Centre should also focus on financial assistance for permanent restoration projects. The initial stand of the Union government was that the National and State Disaster Response Funds were meant for response and relief, not recovery and reconstruction, but following the 15th Finance Commission's nudge, it added recovery and reconstruction as a component of the two funds two years ago. However, when public infrastructure suffers extensive damage, the Centre should provide additional assistance to ease the burden on affected States. Prime Minister Narendra Modi and his team at the Centre must act in the spirit of "cooperative federalism".

GS 3: Disaster management

Key Pointers:

- What was the impact of Cyclones Arnab and Murasu?
- What is Real Time Governance Society (RTGS)?
- What are the major challenges in post-disaster recovery?
- PM Fasal Bima Yojana
- Functions of Finance Commission of India

Anaemia burden — iron alone is no solution



Chandrakant Lahariya

A practising physician and author of the recent book, 'Pill-Free: You Don't Need Everything You Have Been Prescribed'

India must tackle its anaemia burden through targeted nutrition, better diagnostics and comprehensive public health measures, not salt fortification alone

India's anaemia burden is not in doubt. The fifth National Family Health Survey (NFHS-5) found that more than half of women and about two-thirds of young children are anaemic. In this context, double-fortified salt (DFS) – fortified with iodine and iron – is often proposed as a potentially transformative solution. However, the case for DFS rests on convenience: everyone consumes salt, so why not add iron to it? But convenience is not efficacy, and a policy that asks the country to continue consuming salt to deliver iron deserves closer scrutiny.

Iron fortification of salt is a vehicle that cuts against public health. Indians consume, by most estimates, roughly twice the five grams of salt a day recommended by the World Health Organization (WHO). About one in three adults has hypertension, and India's own non-communicable disease (NCD) action plan commits to a 30% relative reduction in salt intake.

DFS pulls in the opposite direction: its logic depends on steady, generous salt consumption. Households that reduce salt also reduce their iron intake, while the label 'double fortified' invites the belief that more is fine. Calling DFS compatible with sodium reduction is a gesture, not a design.

The claim that salt is consumed in predictable quantities regardless of income also needs qualification. Intake varies by age, sex and region. Adult men typically consume the most, while young children and women consume the least. The groups with the greatest need for iron may therefore receive the smallest doses, while those least likely to be anaemic get the most.

Iron is not a harmless nutrient

The body has no regulated way to excrete iron. Iron can accumulate, promote oxidative stress and has been linked to metabolic disease. In the landmark 2006 Pemba trial in Tanzania, Africa, iron and folic acid supplementation in children in a malaria-endemic setting was associated with increased hospitalisations and deaths. A Kenyan trial published in 2015 found that iron-fortified foods shifted infants' gut flora toward pathogenic bacteria and increased diarrhoea. India has large malaria-endemic and poorly sanitised areas.

Haemoglobinopathies are a further concern. Millions of Indians carry beta-thalassaemia, while sickle cell disease is concentrated in tribal belts. People with thalassaemia, especially those who receive blood transfusions, are prone to iron overload. In this population and settings such as India, screening is not a very good safeguard, nor is it practical. The Public Distribution System (PDS), for example, reaches about 800 million people; screening that many people before they consume salt is simply unrealistic.

There is also the problem of stacking. Fortified rice is already distributed through multiple platforms, including the Public Distribution System (PDS), the Pradhan Mantri Poshan Shakti Nirman (PM POSHAN) scheme and the Integrated Child Development Services (ICDS) scheme. Iron-folic acid tablets are also distributed to several groups. Adding DFS could mean that a child or adolescent receives iron through three or four government programmes at once. There does not seem to be any published analysis of cumulative iron intake across these programmes. Without one, a 'central flagship' rollout would be premature.

There is another dimension to consider: what happens when iron interacts with food. The iron in DFS is non-haem iron, whose absorption depends heavily on the rest of the meal. The typical Indian meal of cereals, millets and pulses is rich in phytates, which bind iron. Polyphenols in tea and coffee, as well as calcium in milk, further reduce absorption. Non-haem iron absorption from such meals is often low, compared with the much higher absorption of haem iron or iron consumed with vitamin C on an empty stomach.

Salt is added during cooking and at the table, so DFS is by definition taken with food. Much of the iron fortificant remains unabsorbed and reaches the colon, where it can feed the wrong microbes. Efficacy trials with supervised delivery and validated specifications do not show what happens with household cooking losses, uneven dosing and variable diets. Absorption is also blunted in people with infection or inflammation, because the hormone hepcidin blocks iron uptake. Fortification therefore works least well where infection burdens are highest.

Iron deficiency only in half of anaemia cases

Anaemia is not the same thing as iron deficiency. Globally, roughly half of anaemia cases are attributed to iron deficiency. India's Comprehensive National Nutrition Survey (2016-18) measured biomarkers and found that iron deficiency explained only part of the anaemia in children and adolescents.

The rest comes from many causes: folate and vitamin B12 deficiency, which are common in vegetarian populations; chronic inflammation and recurrent infections; hookworm; malaria; poor sanitation; haemoglobinopathies; and overall undernutrition, including low protein and vitamin A. Early marriage and pregnancy, adolescent undernutrition and menstrual losses add to the picture. Measurement matters too, since capillary haemoglobin readings and the cut-offs used affect the prevalence figures, and these are debated.

The Indian diet is certainly monotonous and low in haem iron, but diet is only one pathway. A single-nutrient fix applied to a multi-causal condition will under-deliver, and may distract from the diagnostics and sanitation investments that matter. While a single nutrient solution is unlikely to work, India's revised strategy for tackling anaemia – 7x7x7 approach – deserves credit for inclusion of additional measures, to the ongoing strategies.

But gaps remain. The programme still leans on iron-folic acid tablets, despite well-documented compliance challenges and gastrointestinal side effects. Haemoglobin testing alone cannot establish the cause of anaemia, while routine testing for ferritin, vitamin B12 and inflammation markers remains largely absent. "Eating Right" risks becoming an awareness slogan unless it addresses the affordability of foods for households such as eggs, dairy, greens and millets. Digital tracking tends to count tests and tablets rather than health outcomes. Deworming, malaria control, and water, sanitation and hygiene remain at the margins. Making DFS a flagship scheme would reintroduce the one-solution thinking that the 7x7x7 framework is meant to move beyond.

A better pathway

Peru reduced child anaemia by double digits in the early 2010s. It made anaemia a political priority, tracked children by name through health contacts, combined iron supplements and micronutrient powders with cash transfers, and held regions accountable. Progress reversed when the COVID-19 pandemic disrupted service delivery, a reminder that outcomes depend on sustained service delivery rather than a product.

Vietnam is often cited for sharp declines in anaemia among women through weekly iron-folic acid supplementation, deworming and fish sauce fortified with sodium iron ethylenediaminetetraacetate (NaFeEDTA), a form of iron that is better absorbed in phytate-rich diets. These measures were accompanied by rising incomes and greater dietary diversity. Even Vietnam's fortification strategy was carefully matched to local diets and paired with other measures. Neither case shows that a one fortified food can tackle anaemia on its own.

India should not scale up DFS nationally without more groundwork. It should first conduct monitored district-level pilots that measure ferritin, haemoglobin and inflammation, assess cumulative iron exposure across programmes, and monitor potential harm in malaria-endemic and haemoglobinopathy-prone areas.

Fortification should be targeted rather than universal and use better-absorbed iron forms. Meanwhile, greater investment should go towards diagnostics to identify the causes of anaemia, deworming, sanitation and affordable access to diverse foods. Anaemia has multiple causes and cannot be solved by an additive in the salt bottle.

GS 2: Social Justice_ Health

Key Pointers:

- What is the extent of India's anaemia burden?
- What is Double-Fortified Salt (DFS)?
- How can iron fortification affect gut health?
- Why may iron absorption from DFS be limited?
- Other causes of anaemia
- What are the limitations of India's existing anaemia-control programme?
- What is India's 7x7x7 approach?

Damning report

The world must act on Justice Muralidhar's report on Israeli atrocities

Briefing the United Nations General Assembly (UNGA) last week on the International Commission of Inquiry's latest report on the situation in Israel and the Palestinian territories, its chairperson, retired Indian judge Justice Srinivasan Muralidhar, did not couch his words in ambiguity. He said that the unequivocal conclusion was that Israeli security forces continued to commit "war crimes, crimes against humanity, and the crime of genocide" a year after the October 2025 ceasefire agreement brokered by the U.S. The Commission's third such submission since October 7, 2023, the report focuses on the "killings and bodily and mental harm by state actors", predominantly Israeli security forces. It draws on medical records, satellite imagery, forensic analysis, witness testimony and videos posted by Israeli soldiers. Despite Israeli denials, the report finds that soldiers targeted Palestinian civilians, including infants, by using Artificial Intelligence (AI) to identify and execute their targets with impunity; the report quotes top Israel officials claiming the killings. Justice Muralidhar said that more than 75,000 Palestinians including 21,500 children and 11,000 women have been killed across Palestinian territories since 2023, and yet "little or no action" is being taken by member-states, including Israel itself. The report calls on UN members to "employ all means" to prevent the genocide, investigate and prosecute suspects for it, and establish clear rules for AI use in conflicts. The Committee had previously called on UN members to halt military transfers to Israel, and pass sanctions against those linked to child abuses, as well as to cooperate with the International Criminal Court to enforce arrest warrants against Israeli officials and soldiers.

The committee's findings have shocked many around the world but have not thus far effected much action. The UNGA lacks the power to implement any resolution aimed at preventing Israel's actions, and the UN Security Council lacks the consensus to do so, given the U.S.'s support of Israel. So, it should come as no surprise that Justice Muralidhar could not even present the report to the UNGA in person, as the U.S. withheld grant of a visa. New Delhi, while upholding Palestinian rights and providing humanitarian aid, has avoided any recommendation that could harm relations with Israel. India has abstained from UN resolutions calling for a ceasefire or action against Israel, while continuing to supply it with arms, ammunition, ordnance and drone parts. The Ministry of External Affairs has neither directly criticised Israel's actions nor commented on the disturbing findings of reports by the UN commission chaired by Justice Muralidhar and his predecessor, 2026 Nobel Peace Prize laureate Navanethem Pillay. The government's silence is in conflict with its stated principles and could place it on the wrong side of history.

GS 2: International Relations

Key Pointers:

- Functions of UNGA
- Functions of UNSC
- What concerns were raised regarding the use of AI in warfare?
- International Criminal Court (ICC)
- What is India's position on the Israel-Palestine conflict?

What the BRICS carbon market partnership needs



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On September 12, at the 18th BRICS Summit in New Delhi, the New Delhi Declaration confirmed that BRICS members look forward to implementing the Memorandum of Understanding on the BRICS Carbon Markets Partnership. The commitment remains modest: on capacity-building and experience-sharing, with no trading framework, targets or timeline. The Rio summit acknowledged the memorandum in 2025, and New Delhi has reiterated it. With India's BRICS presidency entering its final quarter, operationalising the partnership requires not so much a common trading platform as a common rulebook.

Eight BRICS members reportedly operate voluntary markets, and Brazil, China, India and Indonesia host over a third of the carbon credit projects registered worldwide. Compliance systems are maturing, too. China's emissions trading system (ETS) – added steel, cement and aluminium through its 2024-25 allocation plan. India's Carbon Credit Trading Scheme (CCTS) has notified emission-intensity targets for 490 entities across nine sectors and opened an offset mechanism. Brazil's Law of 2024 establishes the Brazilian Greenhouse Gas Emissions Trading System (SBCE), a cap-and-trade system. However, none of these markets is linked to another.

Divergence and a common framework

China and India allocate to output-based emissions-intensity benchmarks, while Brazil is establishing an absolute emissions cap. The offset-credit rules of these carbon markets look inward; China's compliance market admits only China Certified Emission Reduction credits; India admits only projects begun after January 1, 2025, and requires them to be exclusive; and Brazil will accept credits only under methodologies accredited by a yet-to-be-constituted body. The legal status of carbon units varies too. In Brazil, the securities regulator oversees the market, while in India, carbon credit certificates are traded on power exchanges under regulations issued by the Central Electricity Regulatory Commission (CERC). Thus, the same tonne of abatement is a different legal instrument in each jurisdiction.

BRICS can turn fragmented carbon markets into a coordinated trading framework

A common framework for measurement, reporting and verification (MRV) should therefore be the partnership's first deliverable. BRICS's own 2025 Principles for Fair, Inclusive and Transparent Carbon Accounting already call for comparing producers with peers under similar conditions, using granular default values, and interoperable systems that yield comparable outcomes. The Delhi Declaration does not carry these forward, though it commits members to interoperable standards for low-emission hydrogen and welcomes progress on cooperation among national standards bodies.

The urgency comes from outside. The European Union's Carbon Border Adjustment Mechanism (CBAM) entered its definitive phase in January 2026; the United Kingdom follows in January 2027. Both charge for carbon embedded in imports of steel, aluminium, cement, fertilizer and hydrogen, crediting a carbon price paid at origin only when supported by verified evidence.

The U.K.'s recognition of India's CCTS in August 2026 shows how this works: London decided unilaterally, and relief depends on a form completed by an ISO 14065-accredited verifier. Each exporting country negotiates alone, and exporters without verified data face punitive default values.

Linking domestic carbon projects

A BRICS rulebook would do three things: set common monitoring rules, consistent with ISO 14064, for sectors exposed to border adjustment; mutually recognise verifiers accredited by members' national accreditation bodies, as BRICS customs authorities are pursuing for authorised economic operators; and harmonise registry data fields. Members would gain a collective reference point in dealings with foreign regulators, while exporters would benefit from a single compliance pathway.

The Declaration calls the CBAM unilateral, punitive and discriminatory, but opposition carries greater weight when backed by a credible, verifiable accounting standard.

The second test is a small pilot exchange project that credits domestic markets. Article 6.2 of the Paris Agreement provides the legal basis for bilateral transfers of mitigation outcomes with corresponding adjustments. India has a Joint Crediting Mechanism with Japan Two or three members could mutually recognise methodologies where each already has approved methods, and count a capped volume of authorised units from a partner registry within the domestic offset limit.

Such a pilot would expose friction. Corresponding adjustments mean that the host country cannot count the mitigation towards its own nationally determined contribution. Cross-border settlement would involve capital account regulations and the legal classification of the carbon unit, issues for the BRICS Payment Task Force to address. Registries would need to exchange serial numbers and retirement data to prevent double issuance. The pilot's value would lie less in the volume of credits traded than in turning each friction into a defined drafting question with an institutional owner.

Using existing institutions

The New Development Bank could host a shared registry data facility or a purchasing facility for pilot units. The new dialogue on aligning carbon markets with adaptation could direct a share of intra-BRICS transfer proceeds to adaptation, as the Article 6.4 mechanism does, giving members with limited mitigation potential a stake.

Members' interests diverge where China's scale would make it the price-setter, sanctions complicate settlement, and several members compete in steel and aluminium exports. Full linkage of compliance markets is neither likely nor desirable for now. Common MRV rules and a methodology-level pilot differ: both are low-cost, preserve regulatory autonomy, and strengthen domestic compliance markets. A memorandum confined to capacity building is a reasonable beginning, but a common rulebook would turn the partnership into a functioning market.

GS 2: International Relations

Key Pointers:

- What is BRICS?
- What is the present status of the BRICS Carbon Markets Partnership?
- Carbon Credit Trading Scheme (CCTS)
- Why does BRICS need common Measurement, Reporting and Verification (MRV) standards?
- What three measures can make the BRICS partnership operational?

Science should move past 'top 2%' label



Mamidala Jagadesh Kumar

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Indian scientists, like scientists everywhere, deserve recognition for the work they do in advancing knowledge. International visibility is one such form of recognition. Recent media reports stated that India's presence in the "top 2% scientists' database" is on the rise. Irrespective of whether Indian scientists are included in these lists or not, many of them make important research contributions. Their work must be recognised on its own merits. However, it becomes a concern when inclusion in a database becomes a target or when exclusion is mistaken for lack of worth.

John Loannidis and his collaborators, the creators of the "top 2% scientists' database", have cautioned against treating inclusion in the database as conclusive evidence of research excellence. First, the database relies on publication and citation records from Scopus without checking for their originality. Second, the accuracy of author profiles and classification of disciplines affect the results. Third, it does not consider contributions published in regional languages.

There are problems with how the database's main impact scores (which have become the measure of research quality) are calculated. For multi-author papers, one of the factors that contributes to the score is an author's position in the list of authors. The order of authors can have different meanings across disciplines. Moreover, the database provides scores both including and excluding self-citations. But the citation counts alone do not tell us whether a paper is being appreciated, challenged or merely mentioned. In an analysis shared online in 2023, John Philip examined the list based on scientists' work up to 2022 and reported that 12 of 71 physics Nobel laureates and two of 66 chemistry laureates from 1998-2022 were missing. These examples show how scientists whose work may be of significant scientific merit can also be excluded from the database.

India needs both fundamental research and practical solutions without making inclusion in the 'top 2% scientists' database' the primary goal

Implications for research

Science journalists play an important role in explaining scientific advances to the general public. A 2026 study in *Scientometrics* found science journalists, such as Clare Dyer and Jacqui Wise, included in the 2025 'top 2% scientists' database'. While the work of both scientists and science journalists deserves respect for different reasons, inclusion in the database does not, by itself, distinguish original research from science reporting. The same study also identified an author in the list with 217 retracted papers. This shows that the database has limitations that cannot be ignored.

What implications could this have for Indian science if inclusion in the database begins to influence research choices? In some areas, the researcher may be required to work for several years before research outcomes reach a conclusive shape. Also, years of sustained effort is required in both basic research and research aimed at solving practical problems. A young scientist may feel pressure to choose a popular research topic because of its likely potential to attract more citations rather than focusing on their own interests. India needs both fundamental research and practical solutions without making inclusion in the "top 2% scientists' database" the primary goal.

International research assessment initiatives are evolving in how they assess scientific contributions. For example, applicants to the Swiss National Science Foundation are asked not to include citation counts, journal and institutional rankings in their CVs. The objective is to assess their research contributions for its quality rather than these parameters. Indian scientific contributions also need to be recognised in a similar comprehensive manner.

Consider Chandrayaan-3's landing in the Moon's south polar region. It was a team effort combining advanced instruments, engineering and scientific insight. Similar contributions include IIT Madras's SHAKTI microprocessors, NexCAR19 cancer therapy developed by IIT Bombay, Tata Memorial Centre and ImmunoACT, India's indigenous 4G technology stack and Serum Institute's CERVAVAC vaccine. The scientists involved in these contributions may or may not be part of the "top 2% scientists' database", but their work has clearly advanced knowledge, led to practical applications and improved the lives of people. It is this evidence that matters. To strengthen science, it is necessary to recognise those who discover, build, explain or enable others to do so. Recognising scientific contributions in all their forms can support Indian scientists to pursue meaningful research.

GS 3: Science and Technology

Key Pointers:

- What is the 'Top 2% Scientists' database?
- What are the limitations of the 'Top 2% Scientists' database?
- Why can citation-based rankings exclude deserving scientists?
- How can India improve the assessment and recognition of scientific contributions?

Public spaces and democratic citizenship



Robert Rahman Raman

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What common thread links the mill workers' general strikes of 1919-20, the 1930 Gandhian civil disobedience movement, and Dr B.R. Ambedkar's farmers' rally against the khoti system in 1938 in Bombay (now Mumbai)? Beyond transgressing colonial laws, these popular mobilisations, representing different strands of anti-colonial movements, used and turned the alien and commanding spaces of colonial cities into a veritable theatre of contestation and claim-making. Following World War I, colonial India embraced new rituals of collective resistance such as processions, flag hoisting, public meetings, marches, boycotts and hartals. These new modes of protest transformed urban civic arenas, parks, seashores, maidans, streets, iconic colonial buildings and public squares, that symbolically represented colonial power, into sites of protest and anti-colonial performance.

Volunteers and activists took to the streets and alleys, organising marches, pickets, and processions that often culminated in large public gatherings, creating dramatic moments of confrontation with the colonial state. This topography of dissent and disobedience not only defied the politics of spatial segregation and public behaviour but further re-territorialised these spaces as nationalist spaces.

Take the Esplanade Maidan (now Azad Maidan) in south Bombay, which became a nerve centre and a key site of dramatic confrontation between diverse strands of popular mobilisations expressing collective dissent and the colonial state. In February 1930, 5,000 railwaymen gathered at Esplanade Maidan to demand a wage increase and an eight-hour working day. A few months later, in August 1930, the Satyagraha committee of the Bombay Provincial Congress unofficially renamed it Azad Maidan and called on Bombay's citizens to use this open space for congregation or for any other non-violent purpose, "undeterred by any orders or ordinances which are meant to throttle all expressions of freedom." After the 1937 provincial election and the formation of the Congress ministry in Bombay, Esplanade Maidan again became a site of protests, including a rally of more than 20,000 peasants who gathered at the call of Dr B.R. Ambedkar to oppose the khoti system.

Recent restrictions on protesters at Jantar Mantar and other public spaces undermine the historical relationship between civic arenas and democratic citizenship

Reclaiming space

This re-territorialisation is essential to understanding our collective transformation from colonial subjects to citizens during the freedom struggle. By defying colonial spatial dictates and claiming civic spaces for democratic protest, Indians asserted their right to the city and the nation as a whole.

Post-independence, civic arenas remained vital spatial anchors of Indian democracy. Building on the anti-colonial movement's spatial practices, citizens found creative ways to assert their constitutional rights and challenge the state's overreach. The Samyukta Maharashtra Movement offers a powerful example of this continuity. In the 1950s, Bombay's streets became arenas of mass mobilisation as protesters demanded a separate linguistic State for Marathi-speaking people.

Similarly, the Gandhi Maidan in Patna demonstrated how civic spaces could become battlegrounds against authoritarianism. During the anti-Emergency mobilisation of the 1970s, Jayaprakash Narayan's call for *Sampoorna Kranti* (total revolution) drew upon the political possibilities of popular mobilisation to challenge the concentration of state power. The open ground in central Patna became a theatre of democratic assertion, showing how occupying public space could restore political agency when institutional avenues of dissent were under strain.

This tradition of reclaiming civic space has endured, adapting to evolving political circumstances and constitutional anxieties. The Shaheen Bagh protests against the Citizenship Amendment Act transformed a road in Delhi into a sustained site of democratic resistance. Similarly, the farmers' movement turned highways and the borders of the national capital into enduring sites of protest. Taken together, these protests assert that the right to dissent has always been intrinsically linked to our right to reclaim and reimagine social spaces as citizens.

Recent restrictions on protesters at Jantar Mantar and other public spaces undermine this historical relationship between civic arenas and democratic citizenship. The struggle over public space is not merely about civic access. Treating it as a conditional privilege rather than a constitutional right not only abandons the legacy of the freedom struggle but also curtails citizens' rights.

GS 2: Polity

Key Pointers:

- How were public spaces used during India's freedom struggle?
- How did colonial public spaces become centres of anti-colonial resistance?
- How did the use of public spaces continue after Independence?
- Why are public spaces essential for democratic citizenship?
- Which constitutional provisions protect the use of public spaces for dissent?

From poverty alleviation to prosperity

India has reduced extreme poverty, but its high prosperity gap shows that millions remain far from a comfortable standard of living; informal work, stagnant wages and limited employment opportunities continue to constrain upward mobility

ECONOMIC NOTES

Deepanshu Mohan
Sonakshi Garg

From the poverty income ruler line provided by the recent World Bank estimates, India has recorded one of the fastest extreme income-poverty declines in the world, as per its latest Poverty and Equity brief, which highlights that between 2011 and 2023, an estimated 496 million people moved out of poverty, with extreme income-based poverty ($3/per day) declining to 2.0%.

For the same period, the share of the population living below the lower middle-income country line ($4.20/day, 2021 PPP) fell from 57.7% to 16.1%. Non monetary poverty indicators, as per OPHI's Multi-dimensional Poverty Index, also recorded a sharp reduction in overall poverty numbers, i.e., from 53.8% in 2005-06 to 16.4% in 2019-21.

The figures undoubtedly reflect that India has managed to reduce extreme poverty at a faster pace, even though one has to keep in mind the current (vs aspirational) stage of development position with respect to its measurement calculus, as determined by the poverty-measure line used, i.e., as a least developed country ($3/per day) or low- and middle-income developing countries (LMIDC) ($4.2/per day).

If we take the upper middle-income (UMIDC) poverty-measurement line, which is where India would like to be positioned for becoming more Viksit than now, this line would be defined as $8.30 per person per day as of current estimates. As per this measure, 80% of India's population would currently be below this poverty line of $8.30, applicable for an aspiring upper middle-income country.

The conversion for $8.30/day may come to roughly ₹800 a day per person, with a monthly pay working out to about ₹24,000, which, even by current living standards across cities in India, is not much to speak of. And so, in that context, 80% of Indians still earn less than ₹24,000 per month (as per the $8.30/per day measure).

Irrespective of which line or measurement space one examines India's income-poverty position, one has to intersectionally relate this to assessing whether Indians, despite moving out of extreme poverty ($3/per day), are actually becoming more prosperous or not. Lifting millions above the extreme poverty line represents basic progress, however, it does not, in isolation, establish that the population has acquired better occupational status, socio-economic opportunities, or a better standard of living over time. Understanding the distance between escaping poverty and attaining prosperity is therefore critical to holistically evaluate whether India's economic growth is inclusive.

Measuring the prosperity gap

The prosperity gap is an indicator adopted by the World Bank that measures how far a society is from the baseline standard of prosperity. Introduced to promote the goal of prosperity, the criteria aim to increase sensitivity to distributional issues, shifting the conventional understanding of economic development away from average per capita income, and emphasising that good growth should benefit the least advantaged in society.

As per the recent brief, India's prosperity gap is 4.8, measured against the global benchmark of $28 per person per day (in 2021 purchasing power parity terms). Hence, the average consumption levels across India's population will need to increase by a factor of 4.9 to reach the desired standard of prosperity.

Since improvements in the earnings of poorer persons contribute more significantly to reducing the prosperity gap, India's score of 4.9 leads to the implication that despite substantial reduction in poverty, the nation must still strive for prosperity. A closer inquiry into the World Bank's poverty estimates reveals this marked unevenness in development.

In 2023, an estimated 2.6% of the population lived below $3.00 a day (the extreme poverty line), 16.8% below $4.20 (the lower middle-income line) and 80.0% below $8.30 (the upper-middle-income line). Calculating the difference between successive thresholds, about 64% of the population lay between $4.20 and $8.30.

These percentages assist in inferring a segmentation of the prosperity gap, which is the average, across all people, of $28 divided by each person's daily income. The resulting gap is the factor by which that person's income must rise to reach the benchmark. For instance, a person earning $8.30 needs a factor of 3.4 to be considered prosperous.

Hence, it can be estimated that the 63.9% between $4.20 and $8.30 constitute the largest share of 4.9, leading to the inference that India's prosperity gap remains high because many Indians who have left poverty require their incomes to rise three to sevenfold to reach prosperity (Table 1).

This estimate indicates that this aspirational upward hike is difficult, and the factors that have helped escape poverty are not necessarily the same as those needed to achieve prosperity.

Mobility and human capital markets

While escaping poverty is a statistical phenomenon, building a secure socio-economic life is a labour-market-driven occurrence, and evidence suggests that India's labour market is still not seamlessly transforming the first event into the second. The World Bank brief itself flags this issue by stating that real earnings are broadly flat, employment growth is concentrated in low-productivity work, and youth unemployment rose from 14.6% to 15.9% (Q1 FY2026 to Q1 FY2027).

The data suggest that individuals exiting poverty are being met with weak jobs and uncertain routes to middle-income subgroups. Consequently, the underlying factors explaining the friction in a shift to a prosperous life imply that while employment is expanding, the quality of available jobs is concerning.

For instance, the ILO India Employment Report 2024 found that approximately 90% of India's workers were informally employed, with self-employment accounting for 55.8% of employment in 2022. The 2018 PLFS annual report provided only a modest relief, with regular wage work noted to have risen from 22.4% in 2024 to only 23.6% in 2025.

Informality is reinforced by research that unveils that an increase in employment can be the result of distress, rather than opportunity. Using PLFS data, it has been recorded that the share of unpaid family helpers among all workers increased from 12.41% in 2017-18 to 17.10% in 2023-24. This leads to an unfortunate deduction that increased employment does not necessarily translate to an expansion of well paying, tertiary sector jobs.

One of the strongest indicators that the market is not functioning at its best is the fact that young entrants face the harshest undercurrents when entering the workforce. NCAER's analysis of the Time Use Survey 2024 found that only 46.7% of 20-29-year-olds were employed, with occupational opportunities varying across States.

The most startling figures pertain to the educated youth, as according to The India Employment Report 2024, educated young people accounted for approximately 65.7% of India's unemployed youth in 2022. This phenomenon highlights a mismatch between the qualifications young people are acquiring and the employment opportunities available to them.

Interestingly, households striving to enter the middle class through improved education and healthcare find themselves buying services they may not be able to easily evaluate when selecting.

Das and Dobbin describe 'human capital markets' as riddled with a plethora of fee-charging private providers of education and health, in which quality is difficult to determine, and services are a consumption and an investment. Paid schooling and care do not always guarantee the intended human capital formation, materialising in graduates being unable to convert their investments into employment opportunities.

A paradox that minimises the gains sought to follow increased employment is that even when people are employed, their earnings may not be sufficient to nudge them into a more comfortable economic position. This can occur because real wages have remained broadly flat, as observed by the World Bank brief, and substantiated by the ILO's India Employment Report 2024, which pegged real wages for regular, salaried workers as having remained stagnant or having declined between 2012 and 2022.

The report highlights that being able to consume has very little to do with one's job security, if earnings are not adjusted to the inflationary currents of the market. India has proven that it can combat poverty; however, it is yet to prove that it can foster prosperity. Even though many have breached the poverty line, the prosperity gap remains a caution that for an average Indian, a stable, comfortable life is still out of reach.

For Indians, the journey from escaping poverty to attaining prosperity will require tackling structural and institutional barriers that dictate who can progress and who only survive. The country has already achieved the first basic feat in extreme income poverty. Now, the focus for an aspiring country to become developed would require a transformational shift in supporting more prosperity-enhancing growth that secures and promises better livelihoods, effective human capital-building services, and genuine economic and social opportunities across the socio-economic pyramid. The road to doing that seems far ahead at this point.

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GETTY IMAGES

Beyond the poverty line

India's gains in poverty reduction have yet to translate into secure livelihoods and a better standard of living

Graph 1: Decline in poverty rates across three income thresholds between 2011 and 2023

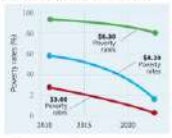


Table 1: The $4.20–$8.30 income group accounts for the largest share of India's prosperity gap

Band (2021)	Share of people	Factor needed	Contribution to 4.9
Below $3.00	2.6%	3.3	at least 0.24
$3.00 to $4.20	13.5%	4.7 to 5.3	0.80 to 1.26
$4.20 to $8.30	63.9%	3.4 to 4.7	about 2.3 to 4.8
Above $8.30	20.0%	Below 3.4	at most 0.67

THE GIST

- The World Bank's prosperity gap measures how far incomes are from the global benchmark of $28 per person per day. India's score of 4.9 points to the scale of the income increase required
- Nearly 64% of Indians fall in the $4.20-$8.30 daily income band, highlighting the concentration of the population just above the lower-middle-income poverty threshold
- Poor-quality human capital services, the prevalence of informal work, and the mismatch between educational qualifications and available jobs impede socio-economic mobility

GS 3: Economy

Key Pointers:

- How much has India reduced poverty?
- What is the World Bank's Prosperity Gap?
- Why does India face a large prosperity gap despite poverty reduction?
- What are the major weaknesses in India's labour market?
- How do education and healthcare markets affect upward mobility?

AMRITA IAS

How U.S. midterms could shape geopolitics for India

Republicans have faced losses but it is unclear whether Trump will seek an early exit from the Iran war; the victory of candidates from immigrant families could temper anti-immigrant rhetoric

NEWS ANALYSIS

Suhasini Haidar
NEW DELHI

The dramatic results of the U.S. midterm elections will probably have less impact on India-U.S. bilateral relations than on geopolitics and, as a result, India's "operating environment" in the world. The elections gave the Democrats a majority in the House of Representatives and a comfortable edge in the Senate, which means U.S. President Donald Trump will face restraints on both domestic and foreign policy.

In interviews given after the results began to come in, Mr. Trump said he stood by his decision to attack Iran in February 2026, but acknowledged that Iran was "part" of the reason for Republican losses. It isn't clear whether this means he will give talks with Iran a greater chance and look for an early exit from the war, but New Delhi will watch closely.

Since the U.S.-Israel strikes on Iran began, at least 24 Indians have been killed, including 15 seafarers, who died in attacks by the U.S. and Iran on vessels in the Strait of Hormuz and the Gulf of Oman.



U.S. Secretary of State Marco Rubio, left, had made positive comments on the FTA when he visited Mumbai last month. ANI

The Hormuz blockade has had a choking effect on India's energy and fertilizer imports and goods trade, and any cessation of hostilities would come not a day too soon for India.

On ties with Russia

The results could have a mixed, or even negative, effect on India's ties with Russia and its import of Russian oil. Mr. Trump's decision on October 16, 2026, to waive all tariffs on countries importing Russian oil under the Lindsey Graham sanctions Act (SRIA) has given India a temporary reprieve.

However, the SRIA had widespread bipartisan support, and New Delhi will need to work both sides of the aisle if it wants the Act calling for tariffs of up to 100% on Russian oil imports to remain waived.

Ministry of External Affairs officials have said India will not bow to unilateral U.S. sanctions in this case. However, compared with July 2026, when India imported about 51% of its oil needs from Russia, the figure dropped to 44% in August and 33% in September.

Another area where India would benefit from constraints on Mr. Trump's "adventurism" is tariffs and the Free Trade Agreement (FTA) negotiations with the U.S.

Despite positive comments from U.S. Secretary of State Marco Rubio, who travelled to Mumbai last month and met top Indian industry leaders, there is some doubt about whether the FTA can be ready in time for Mr. Modi's visit to North America and Europe in mid-December 2026, when he will attend the G-20 summit in Florida.

The rise of Democratic governors, senators and Congress members from immigrant families in these elections could mean a reduction in the anti-immigrant rhetoric that has worried Indians and persons of Indian origin in the U.S.

However, it is unlikely to change the administration's stance on curbing visas, restricting the naturalisation of professionals and deporting undocumented migrants, as these have widespread support.

GS 2: International Relations

Key Pointers:

- India–U.S. Relations
- US Midterm Elections
- How could the elections affect the Iran war and India's energy security?
- How could the elections influence India–U.S. trade relations?
- How could the elections affect Indian-origin communities in the U.S.?

PAC meet calls for closer scrutiny of public spending, quicker action on audit findings

The Hindu Bureau
NEW DELHI/
THIRUVANANTHAPURAM

A conference of Public Accounts Committee Chairpersons from Parliament and 25 State legislatures has called for closer scrutiny of public spending, quicker action on audit findings, and the wider use of forensic tools to identify areas of governance requiring immediate legislative oversight, adopting a resolution to that effect at the end of a two-day meeting in Thiruvananthapuram.

"[Comptroller and Auditor General] CAG reports often reach us years after the money was spent, when officers have moved on and the trail has become untraceable. We were alarmed by the delays by a few governments in placing the reports before the House. There should be a robust mechanism to ensure that all this happens in a time-bound manner," said K.C. Venugopal, a senior Congress leader and chairman of Parliament's Public Accounts Committee (PAC), speaking at the conference's valedictory session.

In a post on X, he added: "Audit only matters when someone answers for what it finds. Accountability cannot end with a CAG report sitting on a shelf; it has to go on until the last rupee is accounted for and the last lapse is fixed."

Hold debates on reports

The PACs are responsible for auditing government revenue and expenditure and examining CAG audit reports. The conference, which was built on the theme, "Audit, accountability and good governance: the evolving role of PAC", concluded with the adoption of an eight-point resolution.


K.C. Venugopal

Lok Sabha Speaker Om Birla, who listened to the deliberations, said that the recommendations from the conference would provide a clear pathway to improve the functioning of PACs and ensure that public money is used for the right purpose.

Mr. Venugopal, on behalf of the PAC Chairpersons, requested the Speaker to ensure that the PAC reports are debated in Parliament and the Assemblies so that accountability is fixed by the government and the public would come to know of the valuable work of the PACs. He noted that a widely shared frustration by the PAC Chairpersons was that the replies from Ministries and Departments to the PAC often come late, are incomplete, or do not come at all.

The eight-point resolution committed PACs to ensuring that public funds are spent only for the purposes for which they were sanctioned and to safeguarding the public exchequer through rigorous monitoring. Among the key decisions was the creation of a digital platform to facilitate continuous peer learning, sharing of best practices, and procedural innovations among PACs across the country. The conference also resolved to work towards standardised timelines for governments to submit Action Taken Notes on audit observations and PAC recommendations.

To improve monitoring of audit findings, the participants called for the adoption of digital oversight systems on the lines of Parliament's Audit Para Monitoring System (APMS) in all State and Union Territory legislatures.

The conference also urged closer collaboration with the CAG, including the use of advanced forensic tools to identify high-risk areas requiring legislative oversight.

GS 2: Poilty

Key Pointers:

- What is the role of the Public Accounts Committee (PAC)?
- What are the major challenges faced by PACs?
- How can PACs strengthen public financial accountability?

AMRITA IAS

Cess levied on sales tax falls within State's ambit, says SC

Krishnadas Rajagopal
NEW DELHI

The Supreme Court held on Wednesday that an additional tax levied by a State legislature on the sale or purchase of goods will not fall outside the State's competence.

A seven-judge Bench confirmed a 1975 ruling (*S. Kodar* versus *State of Kerala*) that a cess levied as an increment to an existing sales tax has to be judged in the same way as the principal tax.

"*S. Kodar* (supra) squarely holds that an additional tax or surcharge computed as a percentage of the sales tax payable is an enhancement of the rate of sales tax and a tax on the sale or purchase of goods within Entry 54 of List II, as it then stood. That decision continues to hold the field," the lead opinion authored by Chief Justice of India (CJI) Surya Kant held.

The Constitution Bench's judgment was based on petitions dating as far back as 1994

In a concurring but separate opinion, Justice K.V. Viswanathan agreed that the judicial reasoning in the 1975 verdict indeed held the fort.

The Constitution Bench's judgment on Wednesday was based on petitions dating as far back as 1994, raising the question as to the legislative competence of a State Legislature, to levy a tax on the sale or purchase of goods under Entry 54 of List II of the Seventh Schedule to the Constitution, on sales tax payable by a dealer rather than directly on his turnover.

'Tax on tax'

The assessees had insisted that such an extra tax could be construed as a 'tax on tax'. They urged that a levy measured by the quantum of tax already payable does not fall upon the 'sale' or 'purchase of goods', which alone is the subject of Entry 54 of State List. Entry 54 covered taxes levied by States on the sale or purchase of goods other than newspapers.

The States, on the other hand, maintained that such a surcharge was nothing more than an enhancement of the rate of sales tax for a class of dealers, and that the mode of its computation did not alter its essential character as a tax on sale of goods.

GS 2: Polity

Key Pointers:

- What are Cess and Surcharge?
- S. Kodar v. State of Kerala case
- Functions of GST council

ECI separates online form for registration of fresh voters and SIR declaration

The Hindu Bureau
NEW DELHI

The Election Commission of India (ECI) has separated Form 6, used for fresh voter registration, and an accompanying declaration in its online version in States where the special intensive revision (SIR) exercise is under way.

Earlier in September, it had already withdrawn the declaration from its digital platforms in States where the SIR exercise had been completed.

Form 6 is used for fresh voters registrations and since the SIR in Bihar a separate declaration had been added to it in physical forms. However, in the digital mode, it was a single form and this included the declaration.

Under the revised process, each must be submitted separately, requiring a separate OTP verification and e-sign, an official said

The ECI had justified it saying a single OTP for the two documents had led to suggestions that the form had been tweaked without the approval of the Union Law Ministry.

This change in the online version of Form 6 had been one of the issues flagged in dissent notes by the two Election Commissioners Sukhbir Singh Sandhu and Vivek Joshi.

On Wednesday, a senior ECI official said: "Previously, Form 6 and the accompanying declaration were submitted together using a single OTP and e-sign for the operational convenience of applicants. Under the revised process, each must be submitted separately, requiring a separate OTP verification and e-Sign. Applicants must complete both steps for successful submission".

Affidavit in court

The poll body has in a counter affidavit submitted in the court last week had said that according to an October 21 decision of its electoral roll division, "similar to physical submissions, online applications in Form 6 shall also be divided into two distinct parts: Form 6 as prescribed in the Rules; and the SIR Declaration."

GS 2: Polity

Key Pointers:

- What is SIR?
- Functions of ECI

Fast-track special courts scheme extended till 2031

The Hindu Bureau
NEW DELHI

Centre plans to operationalise 850 fast track courts to deal with child abuse and rape cases

The Union Cabinet on Wednesday approved a five-year extension of the Centrally Sponsored Scheme (CSS) for fast-track special courts (FTSCs), including exclusive POCSO courts, from April 1, 2026 to March 31, 2031.

The scheme, operational since October 10, 2019, has undergone extensions to ensure expeditious disposal of cases related to rape and offences under the Protection of Children from Sexual Offences (POCSO) Act. It was initially launched for one year and was extended up to March 31, 2026.

The scheme has a total financial outlay of ₹3,788.04 crore, comprising a Central share of ₹2,353.15 crore and a State/Union Territory share of ₹1,434.89 crore.

The Centre's allocation will be met from the Nirbhaya Fund. There are 779 functional FTSCs across the country, including 399 exclusive POCSO courts. They have disposed of 4,02,457 cases since the scheme's inception.

Under the extended scheme, the government plans to operationalise 850 FTSCs, including exclusive POCSO courts, across participating States and Union Territories.

This expansion shall be based on case pendency data across all States and Union Territories.

There is also a provision for a dedicated Judicial Officer, a Special Public Prosecutor and six support staff to facilitate expeditious disposal of pending cases relating to rape and offences under the POCSO Act, 2012.

The continuation of the scheme is expected to expedite trials, reduce the backlog of rape and POCSO cases, and encourage the establishment of Vulnerable Witness Deposition Centres and child-friendly court spaces to facilitate victim testimonies without causing further distress, while prioritising cases involving vulnerable groups like women and children, an official statement said.

GS 2: Polity

Key Pointers:

- Fast Track Special Courts (FTSCs) Scheme
- Protection of Children from Sexual Offences (POCSO) Act, 2012
- How will FTSCs improve access to justice?
- What are the major challenges in ensuring speedy justice?

INBRIEF



Centre earmarks ₹2,814 crore for lithium, nickel processing

The Union Cabinet on Wednesday approved a ₹2,814-crore capital expenditure support scheme to establish domestic processing facilities for lithium and nickel, seeking to strengthen India's critical mineral ecosystem and reduce import dependence. The scheme will remain in force for five years. Union Minister for Coal and Mines G. Kishan Reddy said the scheme would strengthen domestic capabilities, boost manufacturing and reduce dependence on imports.

GS 3: Economy

India secures $400-billion investment commitments in renewables

GS 3: Economy

Key Pointers:

- What is Green Hydrogen?
- Significance of Renewable energy

Saptaparno Ghosh
NEW DELHI

India has secured preliminary investment commitments worth $400 billion across the renewable energy sector, including green hydrogen, energy storage and transmission, among others, Union Minister for New and Renewable Energy Pralhad Joshi said on Wednesday.

Speaking to reporters on the sidelines of the Bharat Renewable Energy Summit and Expo, he said the commitments were made during a CEO roundtable involving global investors and fund managers. "The fund managers have taken all the details and have given a commitment of $400 billion," he said, adding that the figures were preliminary.

Separately, the government will consult industry stakeholders over the next 10-15 days before deciding whether to extend the Approved List of Models and Manufacturers (ALMM) framework, Mr. Joshi said.

AMRITA IAS

Volatility index stays elevated despite five-day market rally

VIX surges 65.4% YTD, reflecting heightened investor anxiety despite recent recovery in equities; crude crisis, flaring up of West Asia conflict, U.S. results and Trump's response add to tension

Gowri Lakshmi
MUMBAI

India's stock markets may have extended their winning streak to five consecutive sessions, but the persistence of the volatility index (VIX) around 15 points suggests that investors remain far from reassured.

The so-called 'fear gauge', which measures the market's expected volatility over the next 30 days, has eased from its late-October high of 17 but remains elevated amid mounting global uncertainties. While the Nifty 50 has declined nearly 8% since the beginning of 2026, the VIX has surged 65.4% year-to-date, reflecting heightened investor anxiety despite the recent recovery in equities.

"VIX basically suggests potential for volatility in markets. The market has been on a rally but investors fear a decline for several reasons. The crude crisis, flaring up of West Asia conflict, U.S. results and Trump's response, all add to anxieties for global investors," V. K. Vijayakumar, chief investment strategist at Geojit Financial Services, said.



On Wednesday, Sensex gained 383 points, or 0.5%, to close at 77,301, while Nifty advanced 149 points to settle at 23,960. PTI

On Wednesday, the 30-share Sensex gained 383 points, or 0.5%, to close at 77,301, while the Nifty 50 advanced 149 points, or 0.6%, to settle at 23,960, extending the market's recovery for a fifth straight session.

However, the gains were partly restrained by weakness in information technology stocks. The Nifty IT index declined 1.5% to 32,061 after falling as much as 3% during the session, weighing on broader market sentiment.

"Post the U.S. midterm elections, investor focus will shift to the U.S. administration's next course of action on West Asia, as any further escalation or diplomatic progress could significantly influence crude oil prices and global market sentiment in the near term," Siddhartha Khemka, head of research, wealth management at Motilal Oswal Financial Services, said in a note.

Strong corporate earnings for the September quarter have provided domestic equities with some support.

Analysts also point to a possible shift in global capital flows towards India as concerns over stretched valuations in artificial intelligence-linked stocks trigger a reassessment of investment allocations.

The AI-led rally over the past two years had attracted substantial foreign capital to markets such as South Korea, Taiwan and the U.S., diverting flows away from India.

Crude oil remains another critical variable.

"Crude has to sustain the current levels or below $100 a barrel for markets to recover completely," Ajit Mishra, senior vice-president, Research, Religare Broking, said, adding, "A reversal in AI deceleration could also potentially risk reverse the gains we have seen so far."

GS 3: Economy

Key Pointers:

- What is India VIX and what does its rise indicate?
- What is the current trend in India's volatility index?

Cabinet okays ₹14,500 cr. VGF scheme for large scale energy storage

The Hindu Bureau
NEW DELHI

The Union Cabinet has approved a ₹14,500 crore Viability Gap Funding (VGF) scheme for the development of grid-scale energy storage systems for the period 2026-27 to 2030-31, the government announced on Wednesday.

The scheme is aimed at supporting the development of 92 GWh of fresh, yet-to-be-commissioned, energy storage capacity across the country.

"The scheme will support creation of new capacities equivalent to 170% of the present-day grid scale energy storage system capacity in the country and help meet the required grid scale ESS capacity of 411 GWh by 2031-32," the government said in a release.

The scheme is designed to provide for the development of 60 GWh of hydro pumped storage plant (PSP) capacity, 30 GWh of battery energy storage system (BESS) capacity and 2 GWh of capacity through alternative energy storage technologies, with a total estimated investment of ₹97,600 crore. "The VGF support will help improve the financial viability of these projects and accelerate the deployment of large-scale energy storage infrastructure in the country," the government said, adding that the scheme will also provide an impetus to domestic manufacturing of BESS

Energy storage capacity will be allocated through a tariff-based competitive bidding process with both public and private sector electricity discoms eligible for VGF support for BESS and hydro PSP projects.

GS 3: Economy

Key Pointers:

- What is viability Gap funding scheme?
- What is hydro pumped storage plant?
- What is BESS?

U.S. midterm impact on India: faster trade deal talks, higher tariffs likely

NEWS ANALYSIS

T.C.A. Sharad Raghavan
NEW DELHI

The results of the U.S. midterm polls, which show that the Democrats having gained control of both the Senate and the House of Representatives, will likely hasten talks between India and the U.S. on a trade deal but could also see higher tariffs on India until the deal is closed, experts said.

On one hand, a desire to quickly close the trade pact to show strength domestically may induce Mr. Trump to raise tariff pressure on India, while on the other, Indian negotiators will likely see this election result as an opportunity to push through a favourable deal for India.



Difficult choices: U.S. President Donald Trump may exert pressure on India to reach a trade deal. AP/ REUTERS

> Trump will now use his executive powers to pressure India for a quick deal that secures market access for U.S. farm, industrial goods, alongside other sops
>
> **AJAY SRIVASTAVA**
> Global Trade Research Initiative

U.S. pressure to rise

According to Ajay Srivastava, founder of trade think-tank Global Trade Research Initiative, this loss will push U.S. President Donald Trump to increase his exercise of his executive powers to pressure India into accepting a deal.

"With foreign policy leverage failing against Russia, China and Iran, Trump needs a quick win," Mr. Srivastava said. "Expect heightened pressure on India for a trade deal to prove American clout."

Leaders in the U.S. and India have repeatedly said over the last few months that the deal between the two countries is almost ready and is awaiting final approvals.

India, in particular, has been holding out until it receives an assurance that it will win a clear advantage over its competitors.

"Trump will now use his executive powers to pressure India for a quick deal that secures market access for U.S. agricultural and industrial goods, alongside other major concessions for U.S. companies," Mr. Srivastava said.

While the U.S. Supreme Court in February defanged Mr. Trump's reciprocal tariff policy that had seen tariffs of up to 50% being levied on India, the President has other tools through which he can levy tariffs.

According to Deep Pal, director of geopolitics and policy at the Koan Advisory Group, the implications of these election results might lead to some difficulty for Mr. Trump in gaining support for his policies.

"For this administration, especially after tonight, any decision has to look like a win domestically, to core Republican voters," Mr. Pal said.

"With Congress out of his hands, a lot will depend on how much control Mr. Trump has over the Republican party and if there will be any purchase for his ideas."

However, Mr. Pal pointed out that the Indian government might view this new reality in the U.S. with greater optimism.

"Indian negotiators, on the other hand, may think that the new realities will make the Trump administration amenable to a better trade deal for India, breaking the current deadlock, and leading to a flurry of new conversations," Mr. Pal said.

He added, though, that the White House has so far shown it does not believe in stepping back, but rather in doubling down.

Tariffs may surge

The U.S. has already implemented several tariffs on India and other nations and has put into place tools that empower it to levy more.

The Lindsey O. Graham Sanctioning Russia and Iran Act of 2026, which envisages tariffs of up to 100% on countries such as India that import large quantities of Russian oil and gas, was first co-proposed by a Republican and Democrat senator and received significant bipartisan support during its passage in both the Senate and the House.

Act in abeyance

Mr. Trump has kept the provisions of the Act in abeyance for now in national interest, but even if he were to decide to implement the tariffs, he will not receive resistance from the Democrat-controlled Congress due to the bipartisan support the Act received.

The U.S. is also currently investigating India and other countries under Section 301 of the U.S. Trade Act of 1974 into whether they are using strategic excess manufacturing capacity to hurt the U.S. economy. Mr. Trump can authorise additional tariffs on the basis of the findings of this investigation without the need for Congress approval.

10% tariff

He has already imposed a tariff of 10% on India on the basis of a Section 301 investigation into whether U.S. trade partners were doing enough to prevent the import of goods made using forced labour.

These Section 301 tariffs will come on top of the 50% tariffs Mr. Trump imposed last year under Section 232 of the Trade Expansion Act of 1962 on the import of all steel and aluminium, including from India. The U.S. Supreme Court, while striking down the legal basis for the reciprocal tariff system, allowed the Section 232 tariffs to remain. Even a Democrat-led Congress will not be able to revoke these tariffs.

GS 2: International Relations

Bhutan sets Guinness World Record for erecting 108 stupas in nine hours

Rahul Karmakar
GELEPHU

Bhutan has set a Guinness World Record by erecting 108 Buddhist stupas in nine hours, Gelephu Mindfulness City (GMC) Governor Lotay Tshering said.

A Guinness World Records representative handed Dr. Tshering the certificate on Tuesday evening acknowledging the feat at Gelephu.

About 40,000 trained volunteers raised the 108 stupas, also called Jangchub Chortens, between 3 a.m. and 11.55 a.m. on November 1, marking the 18th coronation anniversary of King Jigme Khesar Namgyel Wangchuck.

Officials who oversaw the feat said the volunteers were divided into teams of 20-23 members, who worked simultaneously across designated sites to raise the stupas, each 14 metres tall and 108 metres apart along the banks of the Mau Chhu River.



Collective effort: Lotay Tshering, Governor of Gelephu Mindfulness City, holds a certificate acknowledging the feat. SPECIAL ARRANGEMENT

The Bhutanese King's vision to build a country for the future, but rooted in tradition, drove Project 108 (stupas). He also envisaged the project as a foundation of GMC, a spirituality-based ethical global economic hub.

Each chorten cost an estimated $200,000, and individuals, families, communities and institutions worldwide have contributed to the project. One of these, Chorten No. 76, was dedicated to Prime Minister Narendra Modi as an "enduring symbol" of the King's "profound admiration" of India's "steadfast commitment for the realisation" of GMC.

"To raise 108 Stupas in a matter of hours is a remarkable accomplishment. But the true fruit of those blessings, those prayers, and that labour is seen in us, the Bhutanese people. In our values and virtues, in our loyalty, and in the joy we take in service," King Wangchuck said.

GS 2: International Relations

Key Pointers:

- What Guinness World Record has Bhutan achieved?
- What is Project 108 and what is its objective?
- What is the religious and cultural significance of 108 stupas?
- What is Gelephu Mindfulness City (GMC)?
- How does the project reflect India–Bhutan relations?

Bengaluru exhibition attempts to make the quantum seem human

The 'QUANTUM' series at Science Gallery Bengaluru showcases a meld of science and art to turn the counter-intuitive principles of quantum physics into a human experience; it forces the visitors to acknowledge that their place in the universe is governed by uncertainty, ambiguity, and possibility

Suyantan Datta
BENGALURU

If you enter Science Gallery Bengaluru one of these weekends, you should find Mr. Tomkins to your right. At first glance, he might appear asleep — or dead. But look at him from a different angle, and you might catch him in the middle of a prance.

'Mr. Tomkins meets Schrödinger' is one of the 34 exhibits at the Gallery's latest programme, simply called 'QUANTUM'.

Set up by The Hashtagé Collective, comprising artists Parvothi Nayar, Sajra Biju, Abin Chaudhuri, Biju Kurinkose, and Sindhura V.S., 'Mr. Tomkins' depicts — somewhat literally — Erwin Schrödinger's famous 1935 thought experiment called Schrödinger's cat. The Austrian scientist came up with the thought experiment to contemplate a quantum phenomenon called superposition, where a physical system can exist in a combination of multiple possible states at the same time.

Karnataka Chief Minister D.K. Shivakumar opened the exhibit on August 7. According to the curatorial note, 'QUANTUM' seeks to make "the invisible somewhat visible, somewhat palpable, and somewhat knowable".

The work on display in the exhibit ranges from models of different ways in which humans have conceived the atom to abstract and material meditations on descriptions of the quantum realm. Visitors can also expect to encounter, across galleries, the work of scientists who wrote "India's Quantum Story", in the Gallery's words, as well as women scientists from around the world who shaped the history of quantum physics, often sans the recognition their male peers garnered.

But QUANTUM's real achievement lies in reimagining quantum physics as a starting point for deliberations on our place in a world, forcing us to acknowledge that it is governed by uncertainty, ambiguity, and possibility.

"We want visitors to leave with new questions and a sense of wonder about the world around us," Jahnavi Phalkey, the Gallery's Founding Director, said. "QUANTUM is an invitation to explore what we know and consider what we are yet to discover in the field of quantum science."

Using both physics and metaphors, QUANTUM turns the principles and properties of quantum physics into a human experience.

Like in the quantum world, where the act of measurement collapses a particle to one state, it is human encounter in these exhibits that affirms one possibility out of many

Encounters with entanglement

Quantum physics is the branch of science that studies the behaviour of matter and light at atomic and subatomic scales. It describes many counterintuitive phenomena like superposition and entanglement that, in the public consciousness, are often incredibly mysterious as well.

Entanglement is when distinct particles, e.g., electrons, share a single quantum state. It is a mathematical idea physicists use to describe the unusual way in which entangled particles behave. For example, if you measure the state of one electron, it will instantly determine the state of an entangled electron — even if they are many kilometres apart.

For humans, entanglement is difficult to visualise. It defies our everyday experience of the universe.

But the artists at SGB have tried to capture its character through their work.

For example, Dayanand Nagaraja's 'Kagganta' (shown below) is a large three-panel painting that hangs in the exhibit's first gallery. 'Kagganta' is a Kannada word that literally means 'a knot that is hard to untie'.

The painting's first impact is its sheer size: the painting is 2.7 metres wide and 1.5 metres tall, (excluding the frame and the gaps between panels). Then come the striking colours: hues of orange, a more fleshlike tone, and shades of black and gray. Daunting though the painting's detail might be up close, viewing it from a distance allows a different perspective to emerge: the contours of literal knots, among shapes entwining with each other like strands of DNA.

But the real knot in the painting might be its meaning: 'Kagganta' is simultaneously a literal reading of entanglement and a representation of its innate mystery. Per the note accompanying 'Kagganta', the work "creates a landscape where meaning is never fully settled. Some knots cannot be untangled, only encountered."



Light topic: A mediator explains experiments displayed as part of the QUANTUM exhibition at Science Gallery Bengaluru. J. ALLEN FERNUSE

Many other exhibits use quantum phenomena as starting points to meditate on the world we inhabit. For example, 'Fowl Action at a Distance' by the U.S. artist Lyndsey Walsh is inspired by research indicating that birds perceive the earth's magnetic field through proteins in their eyes. Focusing on chickens trained to respond to an electromagnet on a farm in Bengaluru's Sarjapur, 'Fowl Actions' combines motion-capture imagery, holographic projections, and sound to explore the "invisible connections between farm and city, human and animal, technology and ecology".

Another interactive installation, 'Quantum Hearts, Entangled Lives', draws on quantum properties like superposition and entanglement to play with the notion of narrative. Instead of the conventional, linear understanding of narrative — where one event leads to another before a conclusion emerges — 'Quantum Hearts' presents four connected narrative arcs that, according to the curatorial note, "exist in multiple possible states at once".

Visitors interact with the installation through rectangular and cylindrical blocks. Depending on how the blocks are arranged, the multiple possibilities give way to a unique outcome — much like how the act of measurement determines the state of a quantum particle.

The four arcs are called "Encryption", "Love", "Mystery", and "Justice".

Consider the case of Love. Two characters fighting a court case against each other meet online anonymously and continue to text each other. Two possible outcomes of the story are whether they meet.

Similarly, in the case of Mystery, one of the same characters is looking to uncover the cause of his father's death. As visitors, we are told the father died by suicide resulting from loneliness. Whether the character finds this out is contingent on how visitors arrange the blocks.

That said, the outcome of a particular arrangement is not always the same. For each arrangement possible combination, there are multiple probable storylines — just like quantum superposition.

Mulla Ataat Muzawar, who collates exhibition-related research at SGB and interacts with visitors on the floor, said the exhibit is "also a way to evoke the feeling that sometimes you can keep trying to lead things towards a certain outcome and they might still never head that way."

Human in the loop

Like 'Quantum Hearts', many other exhibits at QUANTUM invite visitors to participate, sometimes by manipulating objects and at others by simply touching them.

For instance, Berlin-based game developer and interactive installation artist Robin Baumgarten's 'Quantum Jungle' is a hexagonal installation made of a thousand touch-sensitive springs. Each spring is surrounded by a ring of LED lights. When a visitor touches the springs, the lights come alive in a stunning, disco-like display, meant to communicate quantum superposition and Schrödinger's wave equation.

According to Baumgarten, the glow around each spring represents how a quantum particle can occupy multiple positions at once, being in a superposition of all those positions.

When a visitor withdraws the hand, the lights begin to disperse out, creating what the accompanying note calls "a cloud of possibilities". This is akin to a quantum walk — a way to determine the probability of finding a particle at different positions as it moves through space.

An algorithm on the display's back-end uses Schrödinger's wave equation, which predicts how the quantum state of a particle changes over time and space, to determine the probabilities for each possible position. These probabilities are coded in the colours and brightness of the lights: the brighter the glow around a spring, the more likely the particle is to be found there.

Finally, when the visitor touches a spring again — which represents a quantum system being observed — the cloud fades. What appears instead is a glowing set of LEDs surrounding a single spring, representing the collapse of these multiple possibilities into a single position. Physicists call this the observer effect: when one tries to measure the state of a quantum system in superposition, the act of measurement collapses the system into one definite state.

The tactile nature of 'Quantum Jungle' and 'Quantum Hearts' turns visitors from passive observers into active participants. Like in the quantum world, where the act of measurement collapses a particle to one state, it is human encounter in these exhibits that affirms one possibility out of many.

QUANTUM is open to more such encounters.





Provoking thoughts: 'Mr. Tomkins meets Schrödinger' by The Hashtagé Collective, top, and 'Kagganta' by Dayanand Nagaraja displayed at the QUANTUM exhibition. SCIENCE GALLERY BENGALURU AND SAHRIDOH RANDA/SPECIAL ARRANGEMENT

(The author thanks Mulla Ataat Muzawar for inputs.
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GS 3: Science and Technology

GS 3: Environment

Key Pointers:

- Why is the Amazon rainforest increasingly becoming a carbon emitter?
- How does deforestation create a feedback loop that accelerates forest degradation?
- Why is the Amazon rainforest important for global ecological stability?
- What measures are needed to prevent the Amazon from becoming a permanent carbon source?



In 2024, as much as 38% of deforestation was caused by fire. Here, the Brazilian Amazon burns. GETTY IMAGES/ISTOCKPHOTO

The Amazon is no longer a carbon sink, it is an emitter

Divya Gandhi

The world's largest tropical forest, referred to as the 'lungs of the planet,' the Amazon rainforest once acted as a vast carbon sink that helped absorb human-induced CO_2 emissions. But now, a study has found that the Amazon *releases* more CO_2 than it absorbs from the atmosphere, as it is decimated by deforestation and forest fires.

Scientists measured CO_2 levels at different atmospheric altitudes, using research airplanes, between the years 2010 and 2024 at four Amazonian sites. Their findings indicated that "Amazonia is a net carbon source rather than a sink and cannot offset regional anthropogenic emissions."

Wildfires caused the Amazon to emit 1.17 billion more metric tonnes of carbon than it absorbed, found the study, published in the journal *Nature*.

"Forest loss reduces precipitation, raises temperatures and lengthens the dry season, delaying the onset of the wet season," said the authors. There was a reduction in precipitation by 17% during the dry-season peak period (August-October), from 1979 to 2018 and an increase in annual temperature of 0.9°C during the same period.

Flammable forests

"Climate stress is stronger in more deforested regions, rendering forests progressively more flammable," said the study. This phenomenon is amplified by climate events such as El Niño and a greater frequency of droughts.

In the peak of a strong El Niño in 2024 the highest carbon emissions were recorded. This period was the hottest, driest and most strongly degraded by fire: as much as 38% of deforestation was caused by fire that year. "Most Amazonian wildfires are intentionally set, and severe droughts exacerbate their extent and intensity," said the study.

"The main message of the study is shocking: the problem in the Amazon is human activity," said lead author and climate scientist Luciana Vanni Gatti, in a release. "We're losing the forest because the region's development model has been based on destruction. We need public policies that value the standing forest."

Deforestation accelerated sharply particularly between 2019 and 2022 when the Amazon witnessed a loss of 7,91,835 sq.km. of forests. Between 2010-24, there was a 272% rise in mining area, a 19% increase in pasture area, and a 193% expansion of soybean plantations.

"These results highlight the urgent need to implement a zero-deforestation policy, strengthen controls on biomass burning and prioritize forest restoration programmes," said the authors.

The Amazon, which spans five million sq.km. across nine countries, also happens to be a habitat to no less than 10% of all plant and animal species, and home to 30 million people.

The Amazon forest stores approximately 100 billion tonnes of carbon in vegetation and soils. Meanwhile, a study from India published in *Environmental Research: Climate*, said that the country's forests could nearly double carbon storage by 2100.

Vegetation carbon biomass could increase by 97% under a high-emissions, fossil-fuel-intensive scenario by the end of the century, owing to rising precipitation and elevated atmospheric CO_2. Climate change is indeed morphing India's landscape: the largest increases in vegetation carbon are projected in the arid and semi-arid zones in Rajasthan, Gujarat and Madhya Pradesh, the study said.