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THE HINDU
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Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

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Page 01
GS III : Indian Economy / Prelims Exam

The Union government's First Advance Estimates (FAE) for 2025–26 peg India's real GDP growth at 7.4%, reflecting optimism about macroeconomic resilience despite global trade uncertainties. Released by the Ministry of Statistics and Programme Implementation (MoSPI), these estimates are critical as they form the analytical base for fiscal projections and the forthcoming Union Budget. However, emerging headwinds—especially external trade shocks and moderating domestic demand—raise questions about the sustainability and quality of this growth.

Govt. pegs real GDP growth at 7.4% amid concerns over tariffs

Estimate for next fiscal comes with uncertainties and 50% U.S. tariffs hitting labour-intensive sectors; with Q1 and Q2 growing at 7.8% and 8.2%, second half will see growth slow to 6.8%; consumer spending to grow at 7% slower than last year

T.C.A. Sharad Raghavan
NEW DELHI

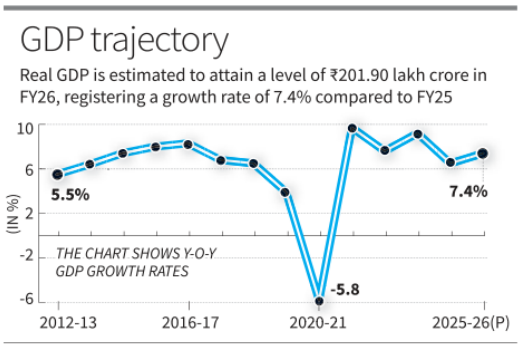
The Union government has estimated that real growth in the Gross Domestic Product (GDP) of the country will stand at 7.4% in the current financial year 2025-26, up from 6.5% recorded the previous year.

In the First Advance Estimates (FAE) of GDP for 2025-26, released by the Ministry of Statistics and Programme Implementation on Wednesday, the government said that nominal growth for the year would be 8%.

The FAE for any year is important as it forms the basis for various calculations and ratios used in preparing the Union Budget.

The First Advance Estimates, and the Second Advance Estimates, which will be released on February 27, are forecasts of the full year's growth based on data available up to that point. The Provisional Estimates for 2025-26, based on the full-year's data, will be released on May 30.

Based on the Centre's assessment that the full year's growth would be 7.4%, and the fact that Q1 and Q2 saw 7.8% and 8.2% growth respectively, the second half of the year would see average growth slow to 6.8%.



Braving headwinds

In December, the Reserve Bank of India had said that GDP growth in 2025-26 would be 7.3%, with Q3 growing at 7% and Q4 at 6.5%.

These projections come at a time when India's economy is facing several headwinds. The 50% tariff levied by the U.S. on imports from India has hit several labour-intensive sectors such as apparel, textiles, and engineering goods. The government has tried to boost consumer demand through both direct tax and indirect tax rate cuts, but the data shows it nevertheless expects Private Final Consumption Expenditure, a metric that captures consumer spending, to grow at 7% in 2025-26, marginally slower than the 7.2% recorded last year.

The mining and quarrying sector is estimated to contract in 2025-26 by 0.7%, as compared to a growth of 2.7% the previous year.

The tertiary sector, which comprises the services sectors, is expected to see growth quicken to 9.1% in 2025-26 from 7.2% in 2024-25. Within this, the 'financial, real estate and profession services', and the 'public administration, defence, and other services' sub-groupings are both expected to grow at 9.9% in 2025-26.

The 'trade, hotels, transport and communication' category is expected to grow at a relatively slower 7.5% in 2025-26, although this is faster than the 6.1% seen in 2024-25.

Gross Fixed Capital Formation, on the other hand, is expected to grow at 7.8% in 2025-26, faster than the 7.1% seen in 2024-25.

Key Highlights of the Estimates

Real GDP growth (2025–26): 7.4% (up from 6.5% in 2024–25)

Nominal GDP growth: 8%

Quarterly trend:

Q1: 7.8%

Q2: 8.2%

Implied H2 growth: ~6.8% (deceleration)

This indicates front-loaded growth, with momentum expected to weaken in the second half of the fiscal year.

Sectoral Performance: Shifts in Growth Drivers

1. Services Sector as the Main Engine

Tertiary sector growth accelerates to 9.1% (from 7.2%).

Strong performance in:

Financial, real estate & professional services (9.9%)

Public administration, defence & other services (9.9%)

This underscores India's services-led growth model, but also highlights limited support from manufacturing and extractive sectors.

2. Stress in Mining and Labour-Intensive Sectors

Mining and quarrying projected to contract by 0.7%, reversing last year's growth.

Labour-intensive export sectors (textiles, apparel, engineering goods) face pressure due to 50% tariffs imposed by the United States, impacting employment and MSME-linked value chains.

3. Investment and Consumption Trends

Gross Fixed Capital Formation (GFCF): 7.8% growth (improved from 7.1%), indicating steady public and private investment.

Private Final Consumption Expenditure (PFCE): Expected at 7%, slightly lower than last year (7.2%), despite tax cuts—suggesting weakening consumer sentiment.

Macroeconomic and Policy Implications

The government's estimate is broadly aligned with the Reserve Bank of India, which projected 7.3% growth, though RBI anticipates sharper moderation in Q4.

Slowing H2 growth reflects:

- External shocks (protectionism, tariffs)
- Demand-side constraints
- Uneven sectoral recovery

The FAE's importance lies in shaping:

- Fiscal deficit calculations
- Revenue buoyancy assumptions
- Welfare vs capital expenditure balance in the Union Budget

Conclusion

India's projected 7.4% GDP growth in 2025–26 highlights macroeconomic resilience and the continued strength of the services sector. However, slowing consumption, stress in labour-intensive exports, and sectoral imbalances pose medium-term risks. Sustaining high growth will require reviving domestic demand, supporting manufacturing and MSMEs, diversifying export markets, and maintaining investment momentum, ensuring that growth remains inclusive, employment-generating, and resilient to external shocks.

UPSC Prelims Exam Practice Question

Ques: Private Final Consumption Expenditure (PFCE) is best described as:

(a) Government's capital expenditure

(b) Household consumption expenditure

(c) Export earnings

(d) Corporate investment spending

Ans: b)

UPSC Mains Exam Practice Question

Ques: Analyse the implications of slowing consumer demand and external trade shocks on India's growth trajectory, despite a strong services sector performance. **(150 words)**

Page 07 : GS III : Environment / Prelims Exam

The debate on whether private reserves can restore wildlife while keeping tourism ecologically gentle has gained relevance in India amid mounting pressure on protected areas. The experience of Jabarkhet Nature Reserve (JNR) near Mussoorie, India's first privately owned and managed nature reserve, offers an instructive case. It highlights how habitat restoration, community participation, and low-impact tourism can coexist—pointing towards an alternative conservation model beyond state-run national parks and tiger reserves.

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Daily News Analysis

Can private reserves restore wildlife and keep tourism gentle?

Private reserves are popular in Africa; in India, responsible private reserves are more about potential than reality; in dissecting how wildlife returned to Jabarkhet Nature Reserve and how it has balanced tourism needs with conservation, it is possible to trace a model for private reserves in India

Neha Sinha

"A pathway to the left leads up to a rather extensive plateau for the hills, and forms a very pleasant resort for picnics... There is plenty of room for a good foot-race, and the scenery around, from most points, magnificent. Ponies ... can go up all the way."

– Guide to Masuri, Landour, Dehra Dun, John Northam, 1884

A bird with a rufous body and a mohawk sings sweetly, the sound wafting over us. Its head is black, its body orange, but despite the colours, it merges seamlessly into the leaves around it. That is because the leaves are thick, their diversity giving them different colours. There are oaks, deodars, rhododendrons, and walnut trees, and on the ground, where the Rufous Sibia dives after finishing its warbles, there are nodding ferns and thick inches of leaf litter which no one has swept up. Above our heads, there are scythes in the sky: Himalayan griffon vultures soaring slowly, with all the time in the world.

When you think of wildlife tourism in India, the options are pre-determined. There are safaris inside tiger reserves or there are National Parks, where you enter in Gypsy cars, at stipulated times, and never get off. These are the most well-known kinds of wildlife tourism, but crowding of the star animal – such as a tiger or elephant – is not unheard of. Then there are trails and hides where you can walk as part of other guided tours, usually on community land.

This is usually for the hardcore wildlife-lover, out for a particular sighting of a rare bird. Could there also be a third option, where you can amble at your own pace, in restored woodland, and where wildlife always gets the first right of way, away from mass tourism? Could there, in essence, be picnics without trash, and could this be achieved without emptying one's pockets?

Abounding with wildlife

In 2025, the Jabarkhet Nature Reserve (JNR), near Mussoorie, turned ten years old. This is Uttarakhand's first privately owned and operated nature reserve, meant to conserve wildlife and habitat as a primary goal.

The 1907 Guide to Mussoorie describes the hills around Dehradun as abounding with wildlife:

"These hills are clad with thick forest composed chiefly of Sal [*Shorea robusta*] and Sain [this could potentially refer to the crocodile bark tree or the *Terminalia tomentosa*]. The pine grows on the higher crests, and they were the home of many wild animals; tigers, leopards, sloth-bears, hyenas, deer, pig and porcupine used to abound in the jungles."

In JNR, similar sightings are possible today: leopard, barking deer, goral, yellow-throated marten, leopard cat, jungle cat, black bear, porcupine, wild boar, red fox, jackal, black-naped hare, civet, and sambar. But this was not an easy journey.

Private reserves are popular in Africa. In India, however, with 'eco-tourism' labels being used in arbitrary ways, perhaps responsible private reserves are more about potential than reality. In dissecting how wildlife returned to JNR and how it has balanced tourism needs with conservation, it is possible to trace a model for private reserves in India.

Rufous sibia pictured against verdant foliage at the reserve. NEHA SINHA

Slowing down the overuse

More than 40 years ago, alarmed by massive deforestation in the hills, the government called for a ban on tree-cutting above 1,000 metres in (then) Uttar Pradesh. In the 1960s, the Jain family, owners of the Jabarkhet Estate, created a working plan for the area with the forest department. The forest was divided into compartments, dead trees were logged, and new ones were planted. Over the years, even this was discontinued and the Estate lay unused and largely unmanaged.

In the intervening areas, Jabarkhet, once described as a 'picnic' spot by Northam in 1889, became more and more crowded. Many different people used the Jabarkhet Estate then, to collect forest produce, as a recreational site, and also to hunt. In 2010, it was evident the area needed stewardship.

"We removed 500 kg of garbage from the slopes. Three tonnes of the weed *Eupatorium* were removed," JNR co-founder Sejal Worah said. "Before we did this, in the intervening years, the forest was badly overused with little management. I was so saddened to see the place where I grew up strewn with rubbish."

If JNR's fortunes had to be turned around, it would both benefit as well as suffer from proximity to tourism-glutted Mussoorie. Mussoorie is so stuffed with hotels and "getaways" that it's easy to forget its name comes from its natural beauty, the red-berried masuri bush. The challenge then was to create a kind of tourism that didn't further take from the mountain, that didn't promise helipads, fake fountains and adventure sports, but a slower form of taking in the Himalayas.

Is it possible that you could stroll around at your own pace, in restored woodland, a place where wildlife gets the right of way, away from mass tourism? Could there, in essence, be picnics without trash, and could this be done without emptying one's pockets?

And if it was to be eco-tourism, the benefits had to accrue to the local population. But this wasn't easy because of the locals' suspicion; they were used to seeing outsiders coming in and "developing" one natural area after another.

The reserve, which now offers affordable ticketed trails, started with selecting people from the neighbouring villages, training them to be guides, and employing them for restoration and maintenance work. This was new for the area, a combination of traditional skills of deeply knowing the mountains and learning bird names in English.

"I didn't think my passion for wildlife could become a job. I want to do this always," Virendra Singh, a naturalist at JNR, said. His favourite wildlife memory is seeing a leopard cub sunning itself on a rock in JNR while the world shut down during the COVID-19 pandemic.

A leopard cub sunning itself at the reserve. JABARKHET NATURE RESERVE

An important refuge

There might be a lot more to see, but this can only happen if we protect natural stands of habitat without shears or with artificial beautification. In 1848, malacologist and snail collector William Benson found a brown land snail (*Bradybaena radicicola*) in the slopes around Jabarkhet. Because JNR could be protected, it can also be studied.

True to its Himalayan roots, the area has incredible diversity: insectivorous sundews, ground orchids, more than 40 species of ferns, and hundreds of species of fungi, dozens of grass species, over 300 types of flowers, and over 150 bird species in about 100 acres of land.

This is more significant when we realise that places known for their natural beauty, whether the Himalayas or the Aravallis, are increasingly being cut up for mining and other commercial projects.

In the Himalaya, widening roads for activities like tourism causes landslides every year. For the Aravallis, the Supreme Court recently accepted a definition of the hills that would have excluded geologically important slopes and ridges, paving the way for ways to use land that does not respect natural topographies or histories. This means, at the landscape level, every stand of natural habitat we can save will be an important stepping stone or refuge for wildlife.

Can we see a rise of private reserves in India where wildlife gets the right of way, and where natural history can return to the present?

(Neha Sinha is a conservation biologist and author of Wild Capital: Discovering Nature in Delhi (2026) *nehabnhs@gmail.com)*

Limits of Conventional Wildlife Tourism

India's wildlife tourism is largely state-controlled, centred on national parks and tiger reserves with:

Time-bound safaris

Vehicle-based tourism

High tourist density around flagship species

Such models often result in:

- Habitat disturbance
- Wildlife stress
- Marginal benefits for local communities

In contrast, private reserves, common in Africa, remain underdeveloped in India due to regulatory ambiguity, misuse of "eco-tourism" labels, and fears of privatization of nature.

Jabarkhet Nature Reserve: A Working Model

1. Ecological Restoration

Area earlier suffered from:

- Deforestation
- Garbage dumping
- Overuse as a picnic spot

Post-2010 interventions included:

- Removal of waste and invasive species (e.g., Eupatorium)
- Passive rewilding and protection of leaf litter and understory

Result: Return of diverse fauna such as leopard, goral, barking deer, civet, martens, and over 150 bird species.

2. Biodiversity Significance

High species richness in a small area (~100 acres):

- Ferns, fungi, orchids, grasses, insectivorous plants
- Historically significant species (e.g., rare land snails studied since the 19th century)

Such private refuges act as stepping-stone habitats, crucial in fragmented landscapes like the Himalayas and Aravallis.

3. Gentle, Regulated Tourism

No mass tourism infrastructure (helipads, adventure sports, artificial landscaping).

Features:

Ticketed, guided walking trails

Limited footfall

Wildlife given right of way

Demonstrates that conservation-first tourism can be economically viable without ecological degradation.

Governance and Community Dimension

Local villagers trained as guides and conservation workers:

Livelihood generation

Skill development (natural history, bird identification)

Builds trust and local stewardship, unlike extractive tourism models.

Aligns with principles of:

Community-based conservation

Inclusive green growth

Broader Policy Relevance

India faces increasing pressure from:

Infrastructure expansion in the Himalayas

Mining and land-use change in the Aravallis

Judicial and policy decisions (including those involving the Supreme Court of India) often have landscape-level ecological implications.

In this context, responsibly managed private reserves can:

Complement state protected areas

Reduce pressure on overcrowded national parks

Support biodiversity outside formal forest boundaries

Challenges and Caveats

Risk of "greenwashing" under eco-tourism labels

Need for:

Clear regulatory frameworks

Scientific monitoring

Safeguards against commercialization and exclusion

Private reserves should supplement, not substitute, public conservation systems.

Conclusion

The Jabarkhet experience demonstrates that private reserves, when conservation-led, community-linked, and tightly regulated, can restore wildlife and promote low-impact tourism in India. As habitats shrink and protected areas face saturation, such models offer a viable complementary pathway—where wildlife gets priority, tourism remains gentle, and conservation becomes a shared societal responsibility. For India's future environmental governance, the challenge lies not in rejecting private participation, but in shaping it through strong ecological ethics and public oversight.

UPSC Prelims Exam Practice Question

Ques: In the context of biodiversity conservation, the term "stepping-stone habitat" refers to:

(a) Artificial corridors created between national parks

(b) Small habitat patches that aid species movement in fragmented landscapes

(c) Breeding centres for endangered species

(d) Buffer zones notified under the Wildlife Protection Act

Ans: b)

UPSC Mains Exam Practice Question

Ques: Private nature reserves can act as important complements to state-led conservation efforts in India.Discuss this statement in the context of biodiversity conservation and sustainable tourism. (**150 Words)**

Page 09 : GS II : Governance

In the context of India's aspiration to become a Viksit Bharat by 2047, youth leadership has emerged as a central pillar of nation-building. In his article, Mansukh Mandaviya, Union Minister for Youth Affairs and Sports, underscores that India's demographic dividend can translate into developmental success only when young citizens are given institutional platforms to influence public policy and governance. The Viksit Bharat Young Leaders Dialogue (VBYLD) represents an attempt to move youth engagement from symbolic participation to substantive leadership.

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Daily News Analysis

Youth leadership is key to Viksit Bha

Mansukh Mandaviya

is the Union Minister of Youth Affairs and Sports, and Labour and Employment, Government of India

India's growth story will be written by those who are shaping its ideas today. Across the country, young Indians are thinking deeply about how India can grow faster, govern better and become developed by 2047. Their ideas are emerging from campuses and communities, start-ups and sports fields, classrooms and village meetings. The real question is no longer whether the youth have something to contribute, but whether their ideas are given a credible platform to influence the nation's direction. The Viksit Bharat Young Leaders Dialogue (VBYLD) is designed to provide that very platform.

India is home to the largest youth population in the world. It is therefore but natural that the direction of the nation's future will be shaped not merely by policies or institutions, but by the imagination, conviction and courage of its young citizens. This vast reservoir of *yuva shakti* is far more than a demographic advantage; it is India's greatest national asset, capable of driving innovation, strengthening democracy and propelling the country towards inclusive and sustainable development.

Lead the change

During my time as Youth Affairs and Sports Minister, I have had the opportunity to engage with young Indians in varied settings, on university campuses, in rural districts, at sports arenas and during youth-led community initiatives. What consistently stands out is the seriousness with which young people think about the nation's future. I recall meeting a group of rural youth volunteers who had organised informal learning centres in their villages. With limited resources but strong conviction, they were addressing gaps in education and skill development through locally designed solutions. Experiences like these reaffirm a simple truth: when young people are trusted and given space, they do not merely participate, they lead.

Inspired by Prime Minister Narendra Modi's call from the Red Fort to bring one lakh youth without political backgrounds into public life, the Viksit Bharat Young Leaders Dialogue was launched in January 2025 reimagining the National Youth Festival in an entirely new format. Over 30 lakh young people engaged through the Viksit Bharat Challenge, more than two lakh essays were submitted, and thousands of youth presented their ideas at the State level. The journey culminated at Bharat Mandapam in New Delhi, where 3,000 youth leaders interacted in a free-flowing dialogue with the Prime Minister, who spent hours listening to their ideas and inspiring them to lead.

Shaping the India of 2047

Beyond the numbers, it was the nature of engagement that made the Dialogue truly historic. It recognised, both in letter and spirit, that the voices of India's youth matter in shaping the India of 2047. Young participants were encouraged to think critically about national challenges, propose solutions and align personal ambition with collective purpose.

The strength of the youth leadership platform lies not only in its scale, but in its design. Diversity of thought, language, culture and lived experience is embedded into the very structure of the initiative. Youth from urban and rural India, students and professionals, innovators and grassroots leaders come together on a common platform. Multiple stages of engagement ensure that ideas are refined through dialogue and exchange, not filtered out by geography, language or background. In doing so, the Dialogue ensures that every young person who participates has both a voice and a platform to amplify it.

India's youth have always been at the heart of the nation's defining moments, from the freedom struggle to the building of the institutions of a India. Today, the n again looks to its y participation, but f and dynamism in c India's growth stor

Building on the first edition, VBYL scheduled to be he 9-12, 2026, signals from a national yo to a platform with resonance. With n such as Design for Tech for Viksit Bha inclusion of the int Indian youth diasp dialogue expands

More than 50 la people participate Bharat Quiz, the fi selection for VBYL it one of the larges engagement exerci Over four intensive participants from c the country will er leading national ar drawing upon prac ideas, and visions disciplines and geo

Dialogue to Direc

What truly sets VB however, is that it *shakti* an opportun speak, but to be he January, observed National Youth Day commemoration o Vivekananda, Prim Narendra Modi wil interact with the y Mandapam, listeni imagine, and inten future of Bharat.

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A Viksit Bharat those who have th lead and the comm serve. India's youth nation must be rea them.

The vast reservoir of *yuva shakti* in the country is far more than a demographic advantage; it is India's greatest national asset

Demographic Dividend and Youth as a Strategic Asset

India hosts the largest youth population in the world, making yuva shakti not merely a demographic fact but a strategic national resource.

Youth are positioned as:

Innovators (start-ups, technology, social entrepreneurship)

Democratic stakeholders (public discourse, governance ideas)

Community leaders (education, skills, grassroots initiatives)

This aligns with the idea that human capital, not just economic capital, will define India's long-term growth trajectory.

Viksit Bharat Young Leaders Dialogue: From Participation to Leadership

1. Institutionalising Youth Voice

Inspired by Narendra Modi's call to induct one lakh youth without political backgrounds into public life.

Launched in January 2025 as a reimagined National Youth Festival, focusing on ideas, dialogue, and leadership rather than celebration alone.

2. Scale and Inclusiveness

Over 30 lakh youth engaged initially; 50 lakh+ in the Viksit Bharat Quiz for VBYLD 2026.

Diversity embedded across:

Rural–urban divide

Linguistic and cultural backgrounds

Students, professionals, innovators, and grassroots leaders

This addresses a long-standing governance gap where youth voices from non-elite backgrounds often remain excluded.

Governance and Democratic Significance

The initiative reflects a shift from top-down policymaking to consultative governance.

Youth are encouraged to:

Critically analyse national challenges

Propose implementable solutions

Align personal ambition with collective national goals

Such engagement strengthens participatory democracy and builds future-ready leadership with ethical grounding and civic responsibility.

From National to Global Platform (VBYLD 2026)

VBYLD 2026 marks a transition from a domestic initiative to one with global resonance:

- Inclusion of the Indian youth diaspora
- Initiatives like Design for Bharat and Tech for Viksit Bharat

The culmination at Bharat Mandapam symbolises the integration of youth aspirations with national policymaking spaces.

The observance of National Youth Day on January 12, commemorating Swami Vivekananda, adds philosophical depth by linking modern leadership with values of service, courage, and character.

Critical Perspective

Strengths

- Genuine scale and diversity of participation
- Emphasis on dialogue rather than tokenism
- Potential pipeline for future leadership

Challenges

- Translating dialogue into policy outcomes
- Avoiding one-time engagement without long-term institutional follow-up
- Ensuring representation does not remain urban-elite dominated

For sustained impact, youth platforms must be linked with mentorship, governance internships, and policy incubation mechanisms.

Conclusion

Youth leadership is not a peripheral element but the core driver of India's Viksit Bharat vision. The Viksit Bharat Young Leaders Dialogue demonstrates how democratic imagination can be renewed by trusting young citizens with responsibility and voice. However, India's true success will lie in converting youthful ideas into durable institutions, policies, and ethical leadership. A Viksit Bharat will ultimately be shaped not only by economic indicators, but by a generation empowered to lead with confidence, competence, and commitment to public service.

UPSC Mains Exam Practice Question

Ques: Evaluate the role of structured youth platforms in strengthening participatory democracy and consultative governance in India. Illustrate with recent initiatives. **(150 Words)**

Page 10 : GS III : Environment / Prelims Exam

More than a decade after the commitments made under the Paris Agreement, India's climate record presents a mixed picture. While the country has successfully reduced emissions intensity and rapidly expanded non-fossil power capacity, these

achievements have not yet translated into absolute emissions reduction. As India moves towards its 2070 net-zero pledge, the next few years will be decisive in bridging the gap between headline targets and real climate outcomes.

India's progress on its climate targets

While the country has successfully reduced emissions intensity, and increased non-fossil power capacity, challenges remain in translating these achievements into absolute emissions reductions. The next few years will be critical in addressing these gaps and ensuring a sustainable future

ECONOMIC NOTES

Deepanshu Mohan
Nagappan Arun
Saksham Raj

There has been a lot of focus on the recent Aravalli judgment and its implications for mining operations across the green belt as well as the government's commitments regarding environmental standards and regulatory protection for ecologically sensitive areas.

In the Paris summit, India had committed to four quantified climate targets, grounded in the principle of "common but differentiated responsibilities" – a position that reflects how, historically, India's per capita emissions were fractions compared to emissions of other major countries like the U.S. (however, currently India is the world's third largest absolute emitter). The centrepiece of Prime Minister Modi's statement at the Paris summit was the pledge to reduce emissions intensity by 33-35% by 2030 (based on the 2005 baseline), coupled with commitments to enhance non-fossil power capacity to 40%, 175 GW of renewable energy, and 2.5-3 billion tonnes of carbon sequestration through forests.

Now, more than 10 years later, one needs to evaluate whether these promises have actually been delivered.

Incomplete decoupling

India's reduction in GDP emissions-intensity (greenhouse gases per unit of economic output) may appear to be a policy success. Using 2005 as baseline, emissions intensity decreased by approximately 36% by 2020, enabling India to meet its original 33-35% target well ahead of the 2030 deadline.

Three structural drivers explain this trajectory. First, the rapid expansion of non-fossil power capacity (solar, wind, hydro, and nuclear) lowered carbon intensity associated with harnessing electricity. By 2023, non-fossil capacity exceeded by approximately 43%, and it reached roughly 50% by mid-2025. Second, India's economic composition shifted toward lower-carbon services and digital sectors, resulting in a reduction in emissions per unit of GDP. Third, national efficiency programmes like Perform, Achieve and Trade (PAT) and UJALA curbed demand growth in industry and households; national assessments record measurable electricity savings and avoided emissions in FY2020-21.

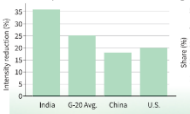
However, intensity gains still coexist with persistently high absolute emissions. India's territorial greenhouse gas (GHG) emissions were approximately 2,959 $MtCO_2e$ in 2020, and absolute emissions have remained high thereafter.

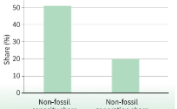
This phenomenon exists because of partial decoupling: GDP growth has outpaced emissions growth, so intensity has declined without an economy-wide absolute fall. This matters because national intensity averages mask sectoral divergence, as evidenced by the continued rise in emissions from the cement, steel, and transport sectors, even as the power sector's CO_2 growth moderated in 2024-25.

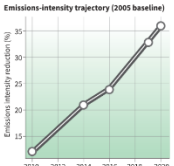
Analyses by Climate Transparency and the International Energy Agency show that India's rate of intensity decline exceeds that of many G-20 peers, but coal's large share keeps absolute per-kWh emissions high. For India's 2070 net-zero pledge to be credible, remaining intensity gains must be translated into absolute emissions reductions through a transparent coal phase-down timetable and industrial decarbonisation roadmaps.

Climate promises

While India has achieved meaningful progress on specific metrics, they also obscure fundamental problems. The intensity gains achieved coexist with rising absolute emissions, and renewable capacity expansion has not translated into a proportional share of generation due to the entrenched baseload of coal







Generation gap

India's renewable capacity scale-up is dramatic, but it does not yet replace fossil baseload. Non-fossil capacity rose from ~29.5% in 2015 to ~51.4% by June 2025. Solar led the build-out (~2.8 GW in 2014 to ~110.9 GW by mid-2025), supported by tariff competition and domestic photovoltaic manufacturing expansion. Wind power increased more modestly (~21 GW to ~51.3 GW over the same period) but has been constrained by land, grid-connection delays and state-level regulatory bottlenecks. Crucially, electricity generation lacks capacity – renewables supplied ~22% of electricity in 2024-25 despite greater than 30% non-fossil capacity because of lower capacity factors and storage shortfalls; thermal (primarily coal) capacity remained ~240 GW in mid-2025 and still provides baseload.

The 175 GW renewables target for 2022 was missed, and although a 500 GW 2030 ambition is technically possible, converting installed capacity into sustained generation and emissions reduction will require rapid scaling of storage, transmission upgrades and stronger policy delivery.

The renewable energy targets that India has set for itself, initially 40% non-fossil fuel capacity by 2030 and now 50% by 2030, are headline successes that mask a vital subtext: capacity and actual production differ sharply due to limitations in renewable integration and intermittency patterns. Non-fossil fuel capacity accounted for 51% of India's cumulative installed capacity of 495 GW as of June 2025, marking the achievement of the first commitment. But this is overshadowed by an essential reality that more than 70% of electricity production in India comes from coal, in spite of its comprising 51% non-fossil fuel capacity. The reason for this is that renewables operate at much shorter capacity compared to coal, as they produce intermittently on a solar and wind basis. In contrast, coal generates constant "baseload" electricity.

Storage is the major sticking point. The Central Electricity Authority has forecast a demand of 336 GWh of energy storage for the 2029-30 period. However, as of September 2025, only 500 MWh of battery energy storage capacity is operational.

Government driven programs such as the National Solar Mission, Solar Parks Scheme, UDAY, PM-KUSUM, and rooftop solar have successfully added 25 GW of renewable energy every year. However, the area of execution remains a challenge, as there is a delay in grid connectivity and limited land acquisition in the power sector. Although the pace of renewable energy in the Indian power sector has reached a groundbreaking level, the country's backbone remains the 253 GW of coal-based capacity.

Forests only on paper

The figure of 2.5-3.0 billion tonnes of CO_2 equivalent carbon sequestration by 2030, as pledged by India appears achievable in terms of numbers. The India State of Forest Report 2023 reveals that India has already sequestered 30.43 billion tonnes of CO_2 equivalents of total carbon stock, representing 2.29 billion tonnes of additional sequestration over the 2005 level, with only 0.2 billion tonnes remaining to achieve the target by 2030.

However, the official figures do not capture the definition's elasticity. The Forest Survey of India's definition of "forest cover" includes any land of more than one hectare with the overstory 10% canopied, and includes eucalyptus monocultures and plantations of mango, tea, and roadside trees in addition to natural forests. Satellite imagery indicating that the country has 7,15,343 sq km of forest cover in 2023, with an increase of only 156 sq km from the previous census in 2021, confuses ecological performance with administrative designation.

Policy mechanisms indicate a friction in implementation. Under the Compensatory Afforestation Fund Act (2016), approximately ₹95,000 crore has been accumulated. However, there is unequal implementation, as States such as Delhi have been able to utilise only 23% of the allocated amount from 2019-20 to 2023-24. The Green India Mission Revised launched in June 2025 after a decade of 'moderate progress,' has proposed regenerating five million hectares through regional projects in the Aravallis, Western Ghats, and Himalayas. 'Plantations' are, however, equated to 'natural regeneration'.

Moreover, climate change is an added stress. While satellite evidence reveals leaf index values that indicate "greening," net primary productivity, and actual carbon assimilation rate are challenged by warming and water stress, especially in the Western Ghats and northeastern parts of India. The country is likely to meet its "forest sink" target by 2030 through mechanisms that are plantation dominated and governance limited, prioritising carbon accounting over ecological restoration.

The road ahead

While India has achieved meaningful progress on specific metrics, they also obscure fundamental problems with climate action in India. The intensity gains achieved coexist with rising absolute emissions, and renewable capacity expansion has not translated into a proportional share of generation due to the entrenched baseload of coal that mask the actual ecological impact.

The transition path that lies ahead demands sustained effort in areas requiring systemic coordination and coordinated governance like the rapid scaling of battery storage to bridge the capacity generation gap, the development of a coal transition roadmap, reformed forest governance to ensure quality biodiversity outcomes alongside carbon target numbers, and increase in data transparency to track progress across sectoral and regional variations as mere technology and capital influx will now no longer suffice.

The upcoming five years present a critical window for India to accelerate renewable energy growth, resolve storage bottlenecks, and strengthen government coordination on grid connectivity and land acquisition.

In summation, India's performative standards may have broadly delivered on its quantified commitments. Still, the outcomes that matter most lie beyond headline metrics, in converting the now installed capacity into continued sustained generation and intensity gains into absolute emission 'moderation'.

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THE GIST

Using 2005 as baseline, emissions intensity decreased by approximately 36% by 2020, enabling India to meet its original 33-35% target well ahead of the 2030 deadline. However, intensity gains still coexist with persistently high absolute emissions.

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India's Paris Commitments: The Baseline

At Paris (2015), India committed to four key quantified targets, guided by the principle of Common but Differentiated Responsibilities (CBDR):

Reduce emissions intensity of GDP by 33–35% from 2005 levels by 2030

Achieve 40% non-fossil fuel–based power capacity by 2030 (later enhanced to 50%)

Install 175 GW of renewable energy

Create an additional 2.5–3 billion tonnes CO_2-equivalent carbon sink through forests

Emissions Intensity: Early Success, Limited Impact

Achievements

India reduced emissions intensity by ~36% by 2020, meeting its 2030 target a decade early.

Drivers of success:

Expansion of non-fossil electricity

Shift towards services and digital sectors

Efficiency programmes such as PAT and UJALA

Limitation: Incomplete Decoupling

Absolute GHG emissions stood at ~2,959 $MtCO_2e$ in 2020 and remain high.

Emissions intensity declined without an economy-wide fall in total emissions.

Carbon-intensive sectors (steel, cement, transport) continue to grow.

This reflects relative decoupling, not absolute decoupling, which is essential for net-zero credibility.

Renewable Energy: Capacity vs Generation Gap

Capacity Expansion

Non-fossil capacity rose from ~30% (2015) to over 51% by mid-2025.

Solar grew from 2.8 GW (2014) to ~111 GW (2025).

Structural Constraint

Renewables generate only ~22% of electricity, despite over 50% capacity share.

Coal (~240–253 GW) still provides over 70% of actual power generation.

The mismatch exists due to:

Low capacity factors of solar/wind

Inadequate storage

Grid and transmission bottlenecks

The Central Electricity Authority projects a need for 336 GWh of storage by 2030, but operational capacity remains negligible.

Forest Carbon Sink: Numbers vs Ecology

On Paper Success

India has achieved ~2.29 billion tonnes of additional carbon sequestration since 2005.

Only ~0.2 billion tonnes remain to meet the 2030 target.

Ecological Concerns

The Forest Survey of India definition of forest cover includes plantations and monocultures.

Carbon accounting often prioritises quantity over biodiversity and ecosystem integrity.

Compensatory Afforestation funds suffer from poor utilisation and governance gaps.

Climate stress (warming, water scarcity) further undermines the quality of forest carbon sinks.

Key Structural Challenges

Coal Lock-in: No transparent coal phase-down roadmap

Storage Deficit: Renewable intermittency remains unresolved

Forest Governance: Plantation-led sequestration dilutes ecological outcomes

Data Transparency: National averages mask sectoral and regional divergence

Analyses by the International Energy Agency show India's intensity reduction outpaces many G-20 peers, yet coal dependence keeps emissions high.

Conclusion

India has largely delivered on the letter of its climate commitments, particularly in emissions intensity reduction and non-fossil capacity expansion. However, the spirit of climate action—absolute emissions moderation and ecological restoration—remains unfulfilled. The coming five years represent a critical window to convert installed renewable capacity into sustained generation, align forest policy with biodiversity outcomes, and articulate a credible coal transition pathway. Without these systemic reforms, climate performance risks remaining performative rather than transformational, undermining India's long-term net-zero ambition.

UPSC Prelims Exam Practice Question

Ques Which of the following best explains why India's absolute greenhouse gas emissions continue to rise despite declining emissions intensity?

a) Incomplete decoupling of economic growth from emissions

b) Increase in agricultural emissions

c) Decline in renewable energy investment

d) Reduction in forest cover

Ans: a)

UPSC Mains Exam Practice Question

Ques : India's climate strategy has so far focused on intensity reduction rather than absolute emissions reduction. Is this approach sustainable in the long run, especially in light of India's 2070 net-zero pledge?

Page 13 : GS II : International Relations

The recent arrest of Venezuelan President Nicolas Maduro by the United States has revived global debate on the declining influence of the petrodollar system. While Venezuela's current oil output is modest, its vast proven reserves—among the largest

in the world—have renewed strategic interest from the U.S. This episode highlights how energy geopolitics, currency dominance, and shifting global power structures are increasingly intertwined.

Understanding the Petrodollar System

The term petrodollar emerged in the mid-1970s following an understanding between the U.S. and Saudi Arabia that global oil trade would be denominated in U.S. dollars. This arrangement:

- Created sustained global demand for the dollar
- Enabled oil exporters to recycle surpluses into U.S. Treasury bonds
- Helped the U.S. finance deficits at lower interest rates
- Cemented American financial and geopolitical dominance

Between 2002 and 2008, when oil prices surged, the petrodollar system reached its peak effectiveness.

Venezuela oil grab revives 'petrodollar' debate

Slippery slope: Venezuela's oil output is currently modest at barely 1million barrels per day. REUTERS

Reuters
ORLANDO, FLORIDA

There were likely many motives behind America's capture and arrest of Venezuelan President Nicolas Maduro on Saturday, but one little-discussed factor could be the White House's concerns about the waning global prominence of the "petrodollar."

Venezuela's oil output is currently modest at barely 1 million barrels per day, but its reported reserves of around 300 billion barrels – 17% of the global stock - are the world's largest.

President Donald Trump has made it clear that the U.S. is interested in tapping this enormous potential, stating that he plans to have U.S. energy majors revitalize the Latin American country's flailing oil industry.

Keeping all this future production within the U.S. orbit could impact more than just energy markets, however, as it would create a lot more petrodollars - a tool that has long helped the U.S. maintain its dominance in the global financial system. The term "petrodollar" was coined in the mid-1970s when the U.S. and Saudi Arabia agreed that global oil sales would be denominated in dollars, creating a new source of demand for the greenback and cementing U.S. strategic, economic, and political power.

The period between 2002 and mid-2008 - when oil almost reached $150 a barrel - potentially marked the peak of the petrodollar's powers. At that time, the U.S. was the world's largest importer of crude, enabling oil-producing countries to amass huge trade surpluses, much of which was recycled back into the vast U.S. Treasury market. This put downward pressure on U.S. and therefore, global, bond yields and interest rates.

Fast forward to 2026, and the environment looks very different. Thanks to the shale oil revolution, the U.S. is now the world's largest oil producer and has been a net exporter since 2021.

Meanwhile, many producer nations like Saudi Arabia now use their oil-driven trade surpluses to plug their own widening domestic budget deficits. Moreover, the rise of China's economic power and new geopolitical rifts have reduced the percentage of the global oil trade denominated in dollars.

There are no official figures, but it is estimated that as much as 20% of the world's crude trade is now priced in currencies other than the dollar, such as the euro or Chinese yuan. The link between the dollar and oil has also shifted. Analysts at JP Morgan estimate that during the 2005-2013 period, a 1% appreciation of the U.S. trade-weighted dollar reduced the price of Brent crude by about 3%.

In the 2014-2022 period, a 1% rise in the dollar reduced the price of Brent by just 0.2%. And last year, the dollar and oil both fell, rather than moving in opposite directions.

So whether one is looking at oil producers' official holdings of Treasuries or oil revenues as a share of global capital flows, it is clear that the power of the petrodollar is on the decline.

Why Venezuela Matters

Although Venezuela produces barely 1 million barrels per day, it holds nearly 17% of global proven oil reserves. Statements by former U.S. President Donald Trump regarding revitalising Venezuela's oil sector through U.S. energy firms suggest a long-term strategic objective:

- Bringing future oil production back into the dollar-denominated trade system
- Reinforcing dollar demand through expanded petrodollar flows
- Thus, Venezuela is less important for present supply and more for future monetary and strategic leverage.

Structural Decline of the Petrodollar

Several developments since 2010 indicate erosion of petrodollar dominance:

1. U.S. Energy Independence

- The shale revolution has made the U.S. the world's largest oil producer
- The U.S. became a net oil exporter in 2021
- This reduced surplus recycling into U.S. financial markets

2. Changing Behaviour of Oil Producers

- Oil exporters increasingly use revenues to finance domestic fiscal deficits
- Less capital flows back into U.S. Treasuries

3. De-Dollarisation of Oil Trade

Around 20% of global oil trade is now priced in non-dollar currencies (euro, yuan)
China's rise and geopolitical fragmentation have accelerated this trend

4. Weakened Dollar–Oil Link

According to JP Morgan, the inverse relationship between dollar strength and oil prices has weakened sharply
This indicates declining monetary influence of oil on global capital flows

Geopolitical and Economic Implications

The decline of the petrodollar signals a more multipolar monetary order
Energy resources are increasingly used as tools of financial statecraft
U.S. actions toward Venezuela reflect attempts to arrest or slow de-dollarisation
Emerging economies may gain policy autonomy but face currency volatility risks

Conclusion

The Venezuela episode underscores that while the petrodollar system is weakening, it remains geopolitically relevant. The U.S. continues to leverage energy dominance to preserve dollar primacy, even as structural shifts—energy diversification, rising China, and alternative currencies—reshape the global financial architecture.

UPSC Mains Exam Practice Question

Ques : How does control over energy resources influence global financial and strategic dominance? Examine with reference to the petrodollar system. (150 words)

Page : 08 : Editorial Analysis

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1878

Daily News Analysis

'Natgrid', the search engine of digital

Apar Gupta
is a lawyer and the Founder Director of the Internet Freedom Foundation

The shock of 26/11 continues to haunt India, but the remedy — the National Intelligence Grid — is cause for deep concern

We tend to quantify the tragedy of the terror attack in Mumbai in November 2008, by the over 160 lives lost. "26/11" was beamed into the living rooms of the country's elites for three days through broadcast television. The sounds of bullets and explosions, the dome of the Taj Hotel swallowed by smoke, and the valour of the Mumbai Police played out alongside a steady refrain in studios and by commentators of a "major intelligence failure". That charge was not conjured out of grief alone.

The report by the high-level inquiry committee on 26/11 and the material placed before Parliament pointed to lapses in the handling of intelligence alerts. This "intelligence failure", it was argued, was the inability to stitch scattered fragments into a coherent warning. David Coleman Headley, a key conspirator, travelled to India on several occasions, leaving a paper-and-pixel trail in visa applications, hotel registries and travel itineraries. Security hawks offered a seductive proposition. Would the lives lost been saved had those disparate data points been aggregated and analysed in time?

Evolution of a 'crown jewel'

Out of that psychological aftershock emerged institutional expansions, but the technological crown jewel was the National Intelligence Grid (NATGRID). Its premise was a middleware interface that would allow 11 specified central agencies to query databases across 21 categories, routed through provider organisations spanning identity and assets, travel and movement, financial intelligence and telecommunications.

Even in its early days, the unease was visible. NATGRID was first publicly announced on December 23, 2009, in a speech by the Home Minister.'

The constitutional question that arose immediately was not whether the state may ever conduct surveillance, but on whether a project of this magnitude could operate without a statutory framework and independent oversight. This daily reported on February 10, 2010 ("'Big Brother' fears stall Chidambaram data plan") that "Ministers raised queries about safeguards and said there was a need for further study". Yet, on June 14, 2012, NATGRID was cleared not through an Act of Parliament, but by executive order and the Cabinet Committee on Security, with a first-phase allocation of ₹1,002.97 crore branded "Horizon-I".

For years, NATGRID's constant delays led people to believe it was 'vaporware'. A project that existed on paper but did not actually work as a massive search engine for tracking citizens that was only announced to calm public anger after the 26/11 attacks. Well, it is now becoming a reality that can no longer be ignored.

Two recent reports in this daily ("National intelligence grid gains traction as Central agencies, police scour for information", December 8, 2025 and "Intel grid linked to I with details of 119 crore residents", Decembe 2025) reveal a quantitative and qualitative expansion of this mass surveillance project. following a national conference of Directors General of Police in Raipur in late Novembe 2025, chaired by the Prime Minister, States asked to "scale up" NATGRID usage. The firs report also said that NATGRID receives arou 45,000 requests every month. Worse, acces once presented as the preserve of central intelligence and investigative agencies, is be widened to police units, including officers d to the rank of Superintendent of Police.

An integration that unsettles

The second development that is even more unsettling is the reported integration of NAT with the National Population Register (NPR) NPR is a repository with the details of 1.19 bi residents, with a relational cartography of households, lineages and identities. It is also politically volatile, repeatedly invoked in the acrimony surrounding the National Register Citizens (NRC) as a prelude to citizenship filt Grafting a population register onto an intelli query platform crosses a fundamental boun It shifts the paradigm from tracking discrete events as intelligence inputs to the mapping Indian. NATGRID's evolution is not unfoldin the technological climate of 26/11, but in 202 amid rapid advances in machine learning ar large-scale analytics.

This daily has also highlighted the deploy of "Gandiva", an analytical engine capable o "entity resolution".

This is further explained as providing the triangulation that is required to decide whet fragmented records belong to the same individual. Paired with facial recognition tha trawl telecom Know Your Customer (KYC) databases and driving-licence records, this i longer the state's "search bar". It is inferenc scale and changes the nature of the risk. He intentions are subjectively determined by ar algorithm.

Two features make this qualitatively diffe from older surveillance debates. First, the sp of bias. Algorithms do not merely excavate t but reproduce distortions embedded in the they ingest and claim that they are objective determinations based on pattern recognitio policing is already skewed by caste, religion geography, analytics will harden those inequ

GS Paper III : Internal Security

UPSC Mains Exam Practice Question : The absence of a statutory framework and independent oversight has been a recurring concern in India's surveillance architecture. Analyse the implications of executive-led intelligence programmes for parliamentary democracy and the rule of law. **(150 words)**

Context :

The debate on internal security and civil liberties has re-emerged with renewed intensity following recent reports on the operational expansion of **National Intelligence Grid (NATGRID)**. Conceived in the aftermath of the 26/11 Mumbai terror attacks to address coordination failures among intelligence agencies, NATGRID was projected as a technological solution for counter-terrorism. However, its reported integration with the National Population Register (NPR) and widening access to State police units raise serious constitutional, ethical, and governance concerns, especially in the context of India's commitment to democratic accountability and the right to privacy.

Background and Evolution

- **Origin:** NATGRID emerged from the perceived "intelligence failure" of 26/11, where scattered data across agencies was not synthesised in time to prevent the attacks.
- **Objective:** To function as a secure middleware enabling authorised agencies to query multiple databases related to identity, travel, financial records, and telecommunications.
- **Institutional Path:** Instead of being established through parliamentary legislation, NATGRID was approved by executive order in 2012, bypassing statutory debate and independent oversight.

Recent Developments (2025):

Around **45,000 queries per month**, indicating routine and large-scale usage.
Access extended beyond central agencies to State police officers up to the rank of Superintendent of Police.
Reported linkage with the **NPR**, covering data of nearly the entire resident population of India.

Key Issues and Concerns

1. Absence of Statutory Backing and Oversight: NATGRID operates without a dedicated law defining its scope, limits, safeguards, or accountability mechanisms.

Parliamentary oversight is minimal, and there is no independent authority auditing access, proportionality, or misuse.

2. Shift from Targeted Surveillance to Population-Level Mapping: Integration with NPR marks a paradigm shift from event-based intelligence gathering to continuous population profiling.

This blurs the line between national security imperatives and mass surveillance of ordinary citizens.

3. Algorithmic Surveillance and Bias: Use of advanced analytics and "entity resolution" tools introduces risks of:

False positives,

Algorithmic bias reflecting social prejudices (caste, religion, region),
Disproportionate impact on marginalised communities.
Automated suspicion can translate into coercive policing without human judgement or contextual understanding.

4. Tyranny of Scale

Surveillance risks today arise not from omniscience but from ubiquity.
Logging and internal authorisation mechanisms become procedural rituals when tens of thousands of searches are conducted monthly, especially in the absence of external scrutiny.

5. Judicial and Democratic Deficit

Despite the constitutional affirmation of the right to privacy (Puttaswamy judgment, 2017), intelligence programmes lacking statutory foundations remain largely unexamined by courts.
Public discourse increasingly equates questioning surveillance with being "anti-national," weakening democratic checks.

Implications for Governance and Internal Security

Security Effectiveness: Intelligence failures often stem from institutional weaknesses, poor training, and lack of accountability rather than absence of data.
Rule of Law: Executive-driven surveillance architectures risk normalising exceptional powers without legal clarity.
Federalism: Expansion of access to State police without uniform standards may lead to uneven application and misuse.
Democracy: Persistent surveillance can chill free speech, dissent, and political participation.

Way Forward

Enact a comprehensive statutory framework for intelligence databases, clearly defining purpose limitation, data minimisation, and retention norms.
Establish independent oversight through Parliament and judiciary, including periodic audits and grievance redressal mechanisms.
Ensure human-in-the-loop decision-making to prevent blind reliance on algorithmic outputs.
Strengthen traditional policing capacities—training, accountability, and coordination—rather than over-relying on technological determinism.

Conclusion

NATGRID symbolises a critical crossroads in India's internal security architecture. While born out of a legitimate desire to prevent terrorism, its unchecked expansion risks transforming a counter-terrorism tool into an infrastructure of pervasive surveillance. In a constitutional democracy, security cannot be pursued at the cost of legality, proportionality, and accountability. Without robust oversight and statutory clarity, NATGRID may erode the very freedoms it claims to protect, reinforcing fears of digital authoritarianism rather than ensuring genuine national security.