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The Hindu Analysis

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Temple Stampede & Crowd Management

Jharkhand Exam Reforms

Green India Mission

Funding Indian Science

AI Models & Workloads

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QUICK-REVISION SNAPSHOT

- **Ashok Dham stampede:** 7 women dead; barricade collapse + power-leak rumour during Shravan rush.
- **Jharkhand:** JSSC-CGL & all TSR Data Processing exams since 2014 cancelled; Kaushal panel on reforms.
- **Science funding:** 'tax-this-to-fund-that' is flawed; fix GeM, GST/import duty, UGC Act 1956, FCRA.
- **NCRB:** 3,074 stampede deaths (2000–2022); NDMA crowd-management framework is key value-add.
- **GIM & CAG:** only 0.11 mn ha treated vs 1.4 mn ha target; ISFR 2023 — 156 sq km true forest of 1,445.
- **AI & workloads:** open-weight vs closed models; data residency, 'token sovereignty', Sarvam, IndiaAI.

01 Seven Women Devotees Killed in Stampede at Bihar Temple

WHY IN NEWS

At least seven devotees, all of them women, were killed and over a dozen injured in a stampede at the **Ashok Dham temple in Lakhisarai district of Bihar** during the Hindu holy month of Shravan, when a heavy rush of pilgrims overwhelmed the site.

WHAT HAPPENED

- The incident occurred around **6.40 a.m.** when a barricade broke amid a heavy rush of devotees, triggering the sudden stampede, according to the Lakhisarai District Magistrate.
- Eyewitnesses said **two trains full of devotees** reached Lakhisarai railway station at the same time on a day considered auspicious in Shravan; the crowd, mostly women, surged towards the temple to offer Ganga water to Lord Shiva.
- In the crush a **bamboo barricade fell and an electric pole snapped**, sparking a rumour of power leakage that caused panic and precipitated the stampede.
- The State announced an **ex gratia of ₹4 lakh** to the next of kin of the deceased; the Centre and State leadership expressed condolences, while the Opposition alleged inadequate crowd-security arrangements.

Seven women devotees killed in stampede at Bihar temple

Amarnath Tewary
PATNA

At least seven devotees, all of them women, were killed and over a dozen injured in a stampede at the Ashok Dham temple in Lakhisarai district of Bihar on Monday.

"The incident happened at 6.40 a.m. due to a heavy rush of devotees. A barricade broke, which triggered the sudden stampede," Lakhisarai District Magistrate Shailendra Kumar said.

Eyewitnesses said two trains full of devotees reached the Lakhisarai railway station at the same time on Monday, considered an auspicious day in the Hindu month of Shravan. The devotees, mostly women, rushed towards the temple located close to

Fire at hotel in Bengal temple town kills eight

TARAPITH
Eight persons were killed in a fire at a hotel in the temple town of Tarapith in West Bengal's Birbhum on Monday. The temple town was handling a heavy footfall during the month of Shravan. » **PAGE 10**

the railway station to offer water from the Ganga to the deity, Lord Shiva.

In the surge, a bamboo barricade fell, while an electric pole snapped at the site. This triggered a rumour of power leakage, causing panic and resulting in the stampede.

Chief Minister Samrat Choudhary expressed grief

over the incident and announced an *ex gratia* of ₹4 lakh to the kin of the deceased. The amount was later handed over to them.

"Necessary instructions have been issued to the administration to ensure proper and prompt medical care for the injured," he wrote on X.

President Droupadi Murmu and Prime Minister Narendra Modi, and former Bihar Chief Minister Nitish Kumar expressed their sorrow over the incident.

Leader of the Opposition in the Assembly and RJD leader Tejashwi Yadav accused the State's NDA government of failing to provide adequate security arrangements to manage crowds during the festival.

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UNDERSTANDING STAMPEDES

- A **stampede** is a sudden, uncontrolled rush of people, usually triggered by panic, fear or excitement in crowded areas, often causing chaos and casualties.

- Per the NCRB report *Accidental Deaths and Suicides in India*, **3,074 lives were lost in stampedes between 2000 and 2022**, with nearly 4,000 stampede incidents recorded over three decades — a recurring failure of crowd governance at religious and mass gatherings.

Causes	Impacts
Immediate Triggers (rumors, sudden obstructions)	Stampedes result in sudden fatalities, severe injuries, and psychological trauma , while also generating grief and anger.
Systemic Failures (underestimating crowd size, poor crowd control , lack of preparedness)	These failures erode public trust in authorities, invite repeated scrutiny of safety protocols , and make it harder to implement sustainable reforms .
Behavioral Factors (panic spread, disregard for norms, star power, political influence)	Behavioral triggers cause uncontrolled crowd movement leading to trampling deaths, spark social unrest , and stigmatize mass gatherings or festivals .
Poor Infrastructure (narrow paths, blocked exits, slippery floors)	Increases the risk of falls and chain-reaction stampedes , causes critical injuries, and leads to economic losses as public participation in events declines.

Causes & Impacts of Stampedes · value-addition matrix for Mains answer enrichment

NDMA CROWD-MANAGEMENT FRAMEWORK — FOUR PILLARS

- **Pre-event planning:** crowd estimation & capacity planning, safe site selection, clear route design with unobstructed entry, exit and movement paths.
- **Structural safety:** zig-zag queues with barriers/railings, virtual queues with waiting-time display, wide outward-opening exits, reliable communication & mobile connectivity.
- **On-ground management:** crowd segregation with barricades, safe traffic & parking control, real-time monitoring via CCTV and analytics.
- **Building awareness:** public risk education, training and drills for all agencies, and detailed Standard Operating Procedures (SOPs) for organisers.

VALUE ADDITION — GOVERNANCE & LEGAL ANGLE



- **Disaster Management Act, 2005** and NDMA guidelines on **Managing Crowd at Events and Venues of Mass Gathering (2014)** govern responsibility across organisers, local administration and police.
- Repeated tragedies (Hathras 2024, Kumbh, temple festivals) show a pattern of **underestimated turnout, weak barricading and absent SOPs** rather than one-off accidents.
- Way forward: statutory crowd-safety audits for large religious events, dedicated crowd-management cells, and accountability for permitting authorities.

SYLLABUS LINK

GS-III — Disaster and disaster management; role of NDMA; crowd control at mass gatherings. Also GS-I society (mass religious mobilisation).

02 Jharkhand Cancels JSSC-CGL Exam After Aspirants' Agitation

WHY IN NEWS

Chief Minister Hemant Soren announced the **cancellation of the Jharkhand Staff Selection Commission-Combined Graduate Level (JSSC-CGL) examination**, 24 days after aspirants began protesting alleged irregularities in State recruitment exams. Editorially, the agitations expose deep-rooted flaws in Jharkhand's examination processes.

KEY DEVELOPMENTS

- The decision was taken in a **four-hour emergency Cabinet meeting**; the CM also cancelled **all examinations conducted since 2014** by the blacklisted agency **TSR Data Processing Pvt. Ltd. (TDPL)**.
- A committee under senior IAS officer **Amitabh Kaushal** will suggest reforms in the conduct of examinations in the State.
- The trigger was the **July 2 result of the JPSC's 14th Combined Civil Services prelims**, which shortlisted 2,204 candidates from about 3.5 lakh aspirants for just 103 posts.
- Aspirants flagged **undisclosed category-wise cut-offs, oddities in the merit list**, and a widely circulated OMR sheet where a "successful" candidate had attempted fewer than half the questions — alongside the conducting agency being blacklisted in May 2025.

Awaiting answers

Student agitations in Ranchi reveal angst over flawed examination processes

When the route up the economic ladder in society is limited to an ever-narrowing range of options in the public sector, and the process of gaining entry through entrance examinations becomes tainted, angst and agitation are the results. This is why students in Jharkhand, loosely organised into two platforms — the Jharkhand Public Service Commission (JPSC)-Jharkhand Staff Selection Commission (JSSC) Abhyarthi Nyay Manch and the JPSC-JSSC Reform Manch — have been protesting in Ranchi for over three weeks. The trigger was the July 2 result of the JPSC's 14th Combined Civil Services preliminary examination, which shortlisted 2,204 candidates from about 3.5 lakh aspirants for 103 posts. Aspirants pointed to undisclosed category-wise cut-offs, oddities in the merit list, a widely circulated OMR sheet on which an ostensibly successful candidate had attempted fewer than half the questions, and the fact that the conducting agency had been blacklisted in May 2025. The two platforms differ in their political leanings and have sought to negotiate separately with the government, but both want the cancellation of the disputed JPSC and JSSC exams, a CBI investigation and prosecution of officials, besides the reconstitution of commissions and a predictable examination calendar.

resignations in the JPSC, and a cabinet committee. On Monday it went further, announcing the cancellation of all examinations conducted since 2014 by the outsourced agency, TSR Data Processing, which might help assuage the agitating students but could leave those who cleared the examinations fairly in the lurch.

The rot in the exam system is deep-rooted. Since the State's formation in 2000, results have frequently been delayed and cycles have been bunched up many times. In a recent JSSC exam, an SIT reported no organised leak despite CID reports that described money changing hands for pre-examination access. These have eroded students' trust in the government; hence the demand for a CBI probe. The 2003 and 2005 exams were subject to CBI scrutiny but the cases are still pending. Yet, the Hemant Soren-led government should concede this politically unpalatable demand, along with other steps, including a fixed exam calendar, and fair and transparent marking with clear cut-offs and time-bound results. Jharkhand is one of India's poorest States, and its mineral wealth has not led to sufficient employment. With youth forced to rely on monsoon-dependent agriculture and allied activities, a government job offers a steady option. Aspirants spend years in coaching centres and libraries in pursuit of this. The youth deserve not only a fair recruitment system but also a government that diversifies their options for gainful employment.

The Hindu Editorial · Page 6 · "Awaiting answers — student agitations in Ranchi reveal angst over flawed examination processes"

THE DEEPER MALAISE

- Since the State's formation in 2000, results have **frequently been delayed and exam cycles bunched up**, corroding aspirants' faith in the system.

- In a recent JSSC exam an SIT reported no organised leak despite CID reports of money changing hands for pre-exam access; the **2003 and 2005 exams faced CBI scrutiny but cases remain pending** — fuelling demands for a fresh CBI probe.
- When upward mobility narrows to a shrinking pool of public-sector jobs and the entry route itself is **tainted, angst and agitation are the inevitable result.**

REFORM AGENDA FOR CREDIBLE RECRUITMENT ★

- **Fixed examination calendar** with time-bound results and published, transparent cut-offs.
- **Fair, auditable marking;** de-blacklisting safeguards so tainted agencies cannot re-enter the system.
- Independent, professionally-staffed commissions insulated from political interference; grievance-redress and answer-key challenge windows.
- Beyond fairness: **diversify livelihoods** so youth are not forced to rely solely on scarce government jobs and monsoon-dependent agriculture.

SYLLABUS LINK

GS-II — Government policies & interventions; transparency and accountability; role of civil services and recruitment institutions; citizens' charters.



GS PAPER III · ENVIRONMENT

03 Losing Forest for Trees: CAG Audit Flags Green India Mission

WHY IN NEWS

A performance audit by the **Comptroller and Auditor General (CAG)** found that the **Green India Mission (GIM)** — conceived to heal India's forests — achieved almost nothing it set out to do over a decade, reigniting the debate on whether India is *counting trees* when it should be *restoring forests*.

WHAT THE AUDIT FOUND

- Against a target of improving forest quality over **1.4 million hectares**, GIM managed only **0.11 million ha** — not even a tenth; on expanding forest cover it barely scraped together **four per cent**.
- Intended **convergence with CAMPA and MGNREGA (now VB-G RAM G)** for plantation and land-restoration never materialised.
- GIM was one of the **eight missions of the National Action Plan on Climate Change (2008)** and the vehicle for India's Paris pledge of an additional carbon sink of **2.5–3 billion tonnes CO_{2e} by 2030**.
- It has effectively been sidelined by the tree-plantation drive '**Ek Ped Maa Ke Naam**' (launched 2024, 140 crore saplings reported) — but planting saplings is not the same as restoring a forest ecosystem.

Losing forest for trees

India is counting trees when it should be restoring forests

A performance audit by the Comptroller and Auditor General (CAG) of the Green India Mission (GIM) has found that a scheme conceived to heal India's forests had, across a decade, achieved almost nothing it set out to do. Instead of improving forest quality over 1.4 million hectares, the mission only managed 0.11 million – not even a tenth of the target. On expanding forest cover, the mission barely scraped together four per cent. The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) channels money collected from industry for diverting forest land into afforestation, while the Mahatma Gandhi National Rural Employment Guarantee Scheme, now rebranded as VB-G RAM G funds rural wage labour that can be used for plantation and land-restoration works, but GIM's intended convergence with these schemes never materialised. The mission was one of the eight pillars of the National Action Plan on Climate Change, unveiled in 2008, and the instrument through which India promised the Paris Agreement an additional carbon sink of 2.5 billion to 3 billion tonnes by 2030. Its animating idea was ecological – biodiversity, water, sequestration, and the revival of habitat. GIM however seems to be on the back burner and, for all practical purposes, replaced by a tree plantation

drive called 'Ek Ped Maa Ke Naam (A Tree in the Name of Mother)'. Launched in 2024, the government reports planting 140 crore saplings so far, but the latest forest data expose the gulf between a tree and a forest. The India State of Forest Report 2023 records a gain of 1,445 square kilometres in green cover but only 156 sq km of it is true forest. The rest, 1,289 sq km, is 'tree cover outside recorded forests.' Within the recorded forests, dense canopy is thinning into scrub. Ergo, India is planting more and foresting less.

Few examples encapsulate this as much as the controversy over the Aravallis. Arguably the country's most degraded range – its hillocks quarried away, its native growth overrun by the invasive 'vilayati kikar' (*Prosopis juliflora*) – it is now to be rescued by a 'Green Wall' of fresh planting. But these arboreal conscripts cannot undo the damage from years of mining, halt encroachment, or summon back an ecosystem that took millennia to form. Restoration is not landscaping. The CAG's instrument is accountancy: it can count hectares and rupees, not the worth of a living forest; and its assessment cannot always capture the practical challenges of implementing missions. However, its verdict still lands. A mission to restore India's forests has been allowed to wither while the state busies itself counting trees.

The Hindu Editorial · Page 6 · “Losing forest for trees — India is counting trees when it should be restoring forests”

TREE COVER VS TRUE FOREST

- The **India State of Forest Report (ISFR) 2023** records a gain of 1,445 sq km in green cover, but **only 156 sq km is true forest**; the rest (1,289 sq km) is 'tree cover outside recorded forests.'
- Within recorded forests, **dense canopy is thinning into scrub** — ergo India is planting more and foresting less.
- The **Aravallis** illustrate the gap: hillocks quarried away and overrun by invasive *vilayati kikar* (*Prosopis juliflora*); a 'Green Wall' of fresh planting cannot undo millennia of ecosystem loss — **restoration is not landscaping**.

ISFR 2023 — DATA TO QUOTE

- Total forest & tree cover: **8,27,357 sq km (25.17% of geographical area)** — forest cover 21.76%, tree cover 3.41%.
- Largest area of forest cover: **Madhya Pradesh > Arunachal Pradesh > Chhattisgarh**; highest as % of area: **Lakshadweep (91.33%) > Mizoram > A&N Islands**.
- Mangrove cover: **4,991.68 sq km (0.15% of area)**, a net decrease of 7.43 sq km since 2021.

CAMPA & THE CAF ACT, 2016



- **CAMPA** is a statutory body (Centre and States/UTs) under the **Compensatory Afforestation Fund (CAF) Act, 2016**, managing funds collected when forest land is diverted for non-forest use.
- Origin: Supreme Court, **T.N. Godavarman v. Union of India**; ad-hoc National Advisory Council set up in 2002 over unutilised afforestation funds.
- Fund split: **90% to States/UTs** for afforestation, **10% retained by the Centre**; National and State CAFs are interest-bearing and non-lapsable.
- The **CAG's instrument is accountancy** — it can count hectares and rupees but not the worth of a living forest; yet its verdict still lands.



GS PAPER III · SCIENCE, TECH & ECONOMY

04 Taxing 'Frivolous' Industries Will Not Fund India's Science

WHY IN NEWS

Amid perennial concern over inadequate funding for Indian science, a recurring proposal is to **tax "unintellectual" industries** — cinema, tourism, apparel, even the IPL — to bankroll research. A commentary argues this 'tax-this-to-fund-that' instinct is myopic and misdiagnoses the real problem.

THE FLAWED PROPOSITION

- One suggestion was to tax the IPL to "magically" generate **₹15 billion** for science — but singling out 'profitable' industries as the source ignores that **science is not an isolated pursuit**: scientific input flows into films, sport and manufacturing too.
- Cross-country evidence shows **high research spending does not automatically follow high sectoral profits**, and vice-versa — the imputation is arbitrary.
- Crucially, **government spending is the prerogative of bureaucrats and politicians** insulated from the consequences of misallocation; there is no guarantee proceeds would reach science.

Taxing 'frivolous' industries will not fund India's science

Wherever concerns are raised about the lack of funding for Indian science, a solution often put forward is to tax "unintellectual" industries such as cinema, tourism, apparel, and perfumes. For example, only recently, an academic from one of India's leading research institutes suggested taxing the Indian Premier League (IPL), which, he argued, would magically generate "₹15 billion" for scientific pursuits; the "stroke of genius" was duly fawned over.

This reflects a common instinct: it is naturally hard not to want a share of the cake for a 'nobler' cause, when a 'frivolous' business makes profit in plain view.

A flawed proposition
It is equally easy to overlook the economic cascade effects of such frivolities. Organised sport, for example, generates employment across a multitude of allied industries: merchandise, food and beverage, broadcasting, physiotherapy and rehabilitation (opens science as a science too). This investment has undeniable trickle-down benefits, across more sports than one and beyond major cities.

Though well-intentioned, the myopic and fallacious "tax this-to-fund that" proposition needs to be dispelled immediately.

If profit in the sports or film industries necessarily came at the expense of science, then the exercise in financial imputation should be very simple: of the \$5 billion in profit earned by a match or a movie, \$1 billion was made because a laboratory fell short of centrifuges. If that were true, then all scientists should refrain from watching movies or sports on government-subsidised campus Wi-Fi, as this would imply scientific funding flowing back to the entertainment industry. Luckily for them, the empirical evidence does not hold up: countries boasting a high expenditure on sport do not necessarily have poor scientific output, and vice versa. Besides, science is not an isolated pursuit; significant scientific input goes into making films or manufacturing textiles.

The disastrous economic experiments in India and around the world in the 20th century demonstrated that wealth is not a fixed, zero-sum pie; progress in X does not necessarily come at the expense of Y. As academics, we must refrain from making sweeping moralistic remarks, as though we know the right level of wealth surplus and how it should be spent better than the market does. Millions of dispersed individual decisions made by ordinary people contain more information than centralised academic or bureaucratic intelligence.

Moreover, how do we know that the state can reliably direct the proceeds towards science?



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Government spending is the prerogative of bureaucrats and politicians, who are inevitably insulated from the consequences of such expenditure.

Should the money be directed towards science, must it be distributed equally among all institutes and laboratories across the country, or apportioned according to productivity? If the latter, how will productivity be measured, and by whom? Some scientists appointed as advisers to the Department of Science and Technology? Would they not favour their colleagues and collaborators?

But, why only science? Just as scientists can make a fair claim for the setting up of state-of-the-art research laboratories, surgeons could demand better hospitals in Tier-3 towns, and policemen could call for better protective gear. Given the same pool of government money, how does one choose among these equally valid, competing claims? Politicians are notorious for basing such decisions on the electoral strength of each group, while academics form factions among themselves: microbiologists might grumble about theoretical physicists reeking disproportionately high funding, much to the delight of funding agencies.

If 'only science', then what kind of science? Should the money go towards buying more microscopes, gene sequencers, or chromatography equipment?

Most scientists would, credulously, want these decisions to be left to scientists themselves: a grand delusion, for no subsidy is ever unconditional. A government that provides a fertilizer subsidy will ensure that it is used only to purchase fertilizers, and will go to extreme lengths to define what a fertilizer is. The subsidy giver has historically viewed the subsidy recipient as a potential embezzler. State funding for science is no different.

What is 'allowed' instead of 'needed'
Government funding for science is, by definition, categorised into watertight compartments, for example, electronics, chemical reagents, consumables, travel grants, and equipment. Laboratories that do not need that extra bottle of hydrogen chloride but desperately need a computer monitor are often unable to make the purchase because the money has been rigidly earmarked. Once a laboratory was allowed to purchase a server under "electronics", but not a graphics card because, for some inexplicable reason, it fell under "consumables" rather than "electronics". If a scientist does not spend all the money allocated to her in a financial year, she may receive less funding in the next one. This absurd incentive produces colossal wastage, as what is "allowed" is bought instead of what is "needed", often at the cheapest possible price.

Consequently, precious time is wasted learning tricks to circumvent these restrictions, much like companies did during the Licence Raj. Experiments are often put on hold while scientists navigate cumbersome procurement rules, particularly towards the end of each financial year.

Steps to take
Theoretically, the money is there, but it is squandered because its expenditure is predetermined by archaic rules that the bureaucracy has little incentive to change. Removing these restrictions would free up considerable resources for their intended use. Procurement aside, even the recruitment of scientists is governed by the archaic University Grants Commission Act (1956), contributing to India losing some of its best scientists to opportunities overseas.

Another indirect and "less bad" measure for expanding available funds would be to remove the Goods and Services Tax and steep import duties on scientific equipment. The rent on knowledge creation slows research and stagnates the circulation of money, which ultimately returns to the government.

Right now, India also places crippling restrictions on private investment in science. Strict compliance requirements under CSR rules incentivise short-term, low-risk research projects. Foreign Contribution (Regulation) Act procedures remain tedious, and many laboratories struggle to navigate the paperwork required to attract foreign funding. This is unfortunate, as private endowments have a greater stake in the success of research than any anonymous bureaucrat ever would.

A bid to promote domestic manufacturing, the government has resorted to import substitution, a measure that serves only to insulate local industries from global competition while failing to deliver world-class products.

The mandatory adoption of the Government e-Marketplace (GeM) has been a death knell, further delaying procurement and forcing scientists to settle for cheaply made Indian equipment that looks identical on paper but falls short of international standards. Often, they spend time identifying "features" available only in foreign-made products so that they can be allowed to purchase them.

If a venture can be a great success in attracting international talent by virtue of being need-led, so can other endeavours. For India to be at the forefront of science, the mechanism is to liberalise the bottlenecks through which money and capital somehow manage to filter into academia and reduce dependence on the government, rather than taxing the few grease that by the golden eggs.

THE REAL BOTTLENECKS — AND FIXES

- **Archaic expenditure rules:** money exists but is squandered because spending is predetermined by rigid rules; even recruitment is governed by the **UGC Act, 1956**, driving talent abroad.
- **Cost of inputs:** removing **GST and steep import duties on scientific equipment** would free real resources — a “less bad” but effective lever.
- **Procurement drag:** mandatory use of the **Government e-Marketplace (GeM)** delays purchases and forces scientists toward cheaper domestic equipment that falls short of international standards.
- **Private capital blocked:** **FCRA** procedures and CSR compliance requirements deter long-term, high-risk research funding and foreign endowments.

CONTEXT & VALUE ADDITION



- India's **Gross Expenditure on R&D (GERD)** is about **0.64% of GDP** — well below China (>2%), the US and Israel; private-sector share is unusually low.
- The **Anusandhan National Research Foundation (ANRF)**, set up under the 2023 Act, aims to catalyse research and crowd-in private and philanthropic funding.
- Way forward stressed by the author: **liberalise the channels through which money and capital flow into academia** rather than taxing a few ‘golden-goose’ sectors.

SYLLABUS LINK

GS-III — Mobilisation of resources; S&T developments & indigenisation; government budgeting. Also GS-II (institutions & regulatory reform).



GS PAPER III · SCIENCE & TECHNOLOGY

05 Match AI Models to Workloads, Not Leaderboards

WHY IN NEWS

Industry leaders argue that as the AI market matures, enterprises should stop chasing model-ranking “leaderboards” and instead **match the right model and deployment approach to each workload** — a shift with direct implications for India's digital sovereignty and IndiaAI ambitions.

THE CORE ARGUMENT

- Success is decided **not by which model scores highest** but by which model — and which deployment approach — fits a particular workload. **Cost, governance, data residency, IP protection and operational complexity** now sit alongside raw capability.
- A telling case: when an AI-driven intrusion hit a company, responders first used frontier models behind commercial APIs — but **safety guardrails blocked forensic requests** because the systems could not distinguish an authorised responder from an attacker, forcing a shift to self-hosted **open-weight** models.

- Very few organisations have only one AI workload: a bank on confidential data, a marketing team on content, and a cybersecurity team on malware all have **different priorities** – one model cannot fit every case.

3

Match AI models to workloads, not leaderboards

The Artificial Intelligence (AI) industry has remained fixated on model rankings. A new release claims the top of some leaderboard almost every week. Until recently, most enterprises simply chose the strongest available model and consumed it through managed APIs from the frontier labs. That decision is no longer straightforward.

What increasingly determines success is not which model scores highest, but which model – and which deployment approach – is right for a particular workload. Cost, governance, data residency, IP protection and operational complexity now sit alongside raw capability as first-order considerations.

The equation has changed

Open-weight models are the main reason that the choice has expanded. Unlike closed models delivered as a remote service, open-weight models allow organisations to run the trained weights themselves, subject to licence terms. Sensitive data can remain inside approved environments. Models can be fine-tuned on proprietary knowledge without routinely sending that knowledge to an external provider. Enterprises gain greater portability, reduce dependence on any single vendor's road map and pricing, and often see substantially lower per-token costs – though total cost of ownership still depends heavily on utilisation and scale.

Open weights are not free. Downloading a model is the easy part. Operating it reliably at enterprise scale requires GPU infrastructure, inference serving, monitoring, security, governance, upgrades and licensing. Greater control comes with greater responsibility. For large organisations with deep engineering capacity, this trade-off can be worthwhile. For most mid-sized and small enterprises, it is far more challenging.

The July 2028 Hugging Face security incident illustrated the point with unusual clarity. When an AI-driven intrusion hit the company's infrastructure, incident responders first turned to frontier models behind commercial APIs to analyse thousands of attacker actions. The



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forensic work required feeding real exploit payloads, attack logs and command-and-control artifacts to the models, but the providers' safety guardrails blocked the requests; the systems could not distinguish an authorised responder from an attacker. Hugging Face completed the analysis on a self-hosted open-weight model instead. Sensitive incident data stayed inside its environment. The lesson was not that closed models are inferior. It was that some workloads structurally require a model you control. Security forensics, malware analysis and any investigation that must examine genuine attacker tooling cannot tolerate third-party guardrails that refuse the query or the risk of data leaving the organisational perimeter. Therefore, enterprises must classify workloads by control requirements as rigorously as by performance needs, and ensure that a capable, vetted open-weight model is already running on infrastructure they govern before an incident occurs.

Very few organisations have only one AI workload. A bank analysing confidential customer data has different requirements from a marketing team generating campaign content. A manufacturer embedding AI in customer service has different priorities from a cybersecurity team examining malware. Expecting one model and one deployment strategy to fit every use case is increasingly unrealistic.

The emerging third option

This is why managed inference platforms for open-weight models deserve more attention than another model launch. These platforms host leading open-weight families on controlled infrastructure and expose them through managed endpoints. Enterprises gain many of the benefits of open weights – data residency, fine-tuning flexibility and often lower cost – without having to build and operate the underlying GPU clusters and inference stack themselves.

Sarvam's recent launch of Sarvam Inference, an India-hosted managed service unveiled at its Epoch 2026 conference, is one concrete example of the category taking shape. The platform

currently serves Sarvam's own 105-billion-parameter model alongside leading open-weight families such as GLM 5.2 and Gemma 4, all running on domestic infrastructure. The significance is not any individual model. Enterprises could already download many of them. The challenge was making them work reliably in production – handling concurrency, latency, security and continuous updates at scale. Managed inference changes that equation. By offering production-grade endpoints under Indian data residency, it is likely to democratise access for companies that could never justify specialised AI operations teams while supporting the broader push for "token sovereignty".

One caveat remains important. Managed open-weight platforms reintroduce vendor dependence – at the infrastructure layer rather than the model layer. Enterprises should evaluate portability guarantees, security posture, pricing trajectory and exit paths with the same rigour that they apply to any frontier API contract.

It is about deployment choice

The way forward is to match the workload, not the leaderboard. No single deployment model is right for every organisation or every use case. Customer-facing tasks that demand frontier reasoning often fit closed APIs. Regulated workloads with strict data-residency obligations frequently suit managed open-weight platforms hosted in-country. Security forensics, malware analysis and IP-critical fine-tuning usually belong on self-hosted deployments.

The discipline lies in making that call workload by workload rather than by corporate default. Companies that invest in understanding the strengths, limitations and economics of each approach – and that systematically match every workload to the option delivering the right balance of capability, control, cost and governance – will extract far more value from AI than those still chasing the latest leaderboard ranking. The competitive advantage will belong to those who treat deployment choice as a core architectural decision, not a procurement afterthought.

The Hindu · Page 6 · "Match AI models to workloads, not leaderboards" · Chandrajit Banerjee (CII) & Debjani Ghosh

OPEN-WEIGHT, DATA RESIDENCY & A THIRD WAY

- **Open-weight models** can be run inside approved environments and fine-tuned on proprietary data without sending it to an external provider – improving portability and reducing single-vendor lock-in, though total cost of ownership depends on scale.
- A rising **third option** – managed inference platforms hosting open-weight families on controlled infrastructure – blends the benefits of open weights (data residency, fine-tuning) with lower operating burden.
- India's **Sarvam** service illustrates the trend; the wider push is toward **"token sovereignty"** – keeping data, inference and value within national infrastructure.

POLICY TAKEAWAYS FOR INDIA

- Deployment choice is an **architectural decision, not a procurement afterthought**; competitive advantage goes to firms that map each workload to the right balance of capability, cost and control.
- Aligns with the **IndiaAI Mission** (compute capacity, indigenous foundation models, safe & trusted AI) and data-protection obligations under the **DPDP Act, 2023**.
- Reinforces the case for **sovereign compute, data-residency norms** and support for domestic open-weight ecosystems.

SYLLABUS LINK

GS-III – Awareness in the field of IT & AI; indigenisation of technology; data security & digital sovereignty. Also GS-II (data governance).

Two Questions from Today's Editions

Question 1 · GS Paper III

15 marks · 250 words

Recurring stampedes at India's mass religious gatherings are less 'accidents' than failures of crowd governance. Critically examine, and suggest an institutional framework for crowd safety at such events.

MODEL APPROACH

- **Intro:** Define a stampede; anchor with the Ashok Dham (Lakhisarai) tragedy and NCRB data (3,074 deaths, 2000–2022).
- **Body — why not mere accidents:** underestimated turnout, weak barricading, rumour-triggered panic, absent SOPs; recurrence (Hathras, Kumbh, temple festivals) shows a systemic pattern.
- **Framework:** apply NDMA's four pillars — pre-event planning, structural safety, on-ground management, awareness; add statutory crowd-safety audits, dedicated cells, CCTV analytics, accountability for permitting authorities.
- **Conclusion:** Treat crowd safety as a governance function backed by the DM Act, 2005, not an afterthought.

VALUE-ADD KEYWORDS: NDMA 2014 crowd guidelines, virtual queues, zig-zag barricading, ex gratia, DM Act 2005, real-time crowd analytics.

Question 2 · GS Paper III

15 marks · 250 words

"India is counting trees when it should be restoring forests." In light of the CAG audit of the Green India Mission and ISFR 2023, distinguish afforestation from ecological restoration and suggest a corrective course.

MODEL APPROACH

- **Intro:** State the CAG finding — 0.11 mn ha treated vs 1.4 mn ha target; GIM as a NAPCC pillar and Paris carbon-sink vehicle.
- **Tree vs forest:** ISFR 2023 — of 1,445 sq km gain only 156 sq km is true forest; canopy thinning into scrub; Aravalli/*Prosopis juliflora* example — restoration ≠ landscaping.
- **Corrective course:** revive GIM's CAMPA-MGNREGA convergence; prioritise native-species assisted natural regeneration; measure canopy quality & biodiversity, not just green cover; community forestry.
- **Conclusion:** Shift metric from saplings planted to ecosystems restored to honour climate commitments.

VALUE-ADD KEYWORDS: CAF Act 2016, CAMPA, assisted natural regeneration, carbon sink 2.5–3 bn t, ISFR 2023, Ek Ped Maa Ke Naam.



Test Yourself

Q1. Consider the following statements regarding the National Disaster Management Authority (NDMA):

1. It is chaired by the Prime Minister of India.
2. It was constituted under the Disaster Management Act, 2005.
3. It has issued dedicated guidelines on managing crowds at venues of mass gathering.

- (a) Only one is correct (b) Only two are correct
(c) All three are correct (d) None is correct

Q2. With reference to the Compensatory Afforestation Fund (CAF) Act, 2016, consider the following:

1. CAMPA is a statutory body at both the Centre and States/UTs.
2. 90% of the collected funds are allocated to States/UTs.
3. The National and State CAFs are lapsable at the end of each financial year.

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q3. As per the India State of Forest Report (ISFR) 2023, which of the following is/are correct?

1. Total forest and tree cover is about 25.17% of the geographical area.
2. Lakshadweep has the highest forest cover as a percentage of its geographical area.
3. Madhya Pradesh has the largest forest cover by area.

- (a) 1 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

Q4. The Green India Mission (GIM) is best described as:

- (a) A crop-diversification scheme under the Ministry of Agriculture (b) One of the eight missions under the National Action Plan on Climate Change (NAPCC)
(c) A river-linking programme under the Jal Shakti Ministry (d) A solar-energy initiative under the National Solar Mission

Q5. The term 'vilayati kikar' (*Prosopis juliflora*), mentioned in the context of the Aravallis, refers to:

- (a) A native keystone tree species aiding groundwater recharge (b) An invasive alien species that displaces native vegetation
(c) A mangrove species found along the Gujarat coast (d) A medicinal shrub protected under CITES

Q6. The Government e-Marketplace (GeM), referred to in the debate on science funding, is:

- (a) A stock exchange for green bonds (b) An online procurement portal for government purchases
(c) A grants portal of the Anusandhan National Research Foundation (d) A GST compliance platform for exporters

Q7. Consider the following about India's research funding landscape:

1. India's Gross Expenditure on R&D (GERD) is around 0.64% of GDP.
2. The Anusandhan National Research Foundation was established to catalyse and fund research.
3. Recruitment of university scientists is governed by the University Grants Commission Act, 1956.

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Q8. In the context of AI deployment, 'open-weight' models are those that:

- (a) Are freely usable only through a vendor's hosted API (b) Have their trained weights available to run within an organisation's own environment
(c) Cannot be fine-tuned on proprietary data (d) Are exempt from all data-residency requirements

Q9. The concept of 'token sovereignty' in AI policy most closely relates to:

- (a) Cryptocurrency regulation by the RBI (b) Keeping AI data, inference and value within national infrastructure
(c) Tokenisation of agricultural commodities (d) Blockchain-based land records

Q10. With reference to the IndiaAI Mission, consider the following statements:

1. It aims to build indigenous compute capacity and foundation models.
2. Data protection for AI systems is anchored in the Digital Personal Data Protection Act, 2023.
3. Sarvam is an example of an India-hosted managed AI service.

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3



Answer Key & Explanations

PRELIMS MCQS · RATIONALE

Answers at a Glance

Q1 C	Q2 A	Q3 D	Q4 B	Q5 B
Q6 B	Q7 D	Q8 B	Q9 B	Q10 D

Explanations

- Q1. Ans (c).** NDMA is chaired by the PM, was set up under the DM Act, 2005, and issued 2014 guidelines on crowd management at mass gatherings. All three are correct.
- Q2. Ans (a).** CAMPA is statutory under the CAF Act, 2016 (statement 1 correct); 90% goes to States/UTs, 10% to the Centre (2 correct). The funds are interest-bearing and NON-lapsable, so statement 3 is wrong. Hence 1 and 2 only.

- Q3. Ans (d).** ISFR 2023: total forest & tree cover is 25.17% of GA; Lakshadweep (91.33%) leads in percentage terms; Madhya Pradesh has the largest forest cover by area. All three are correct.
- Q4. Ans (b).** GIM is one of the eight missions of the NAPCC (2008), aimed at protecting, restoring and enhancing India's forest cover and responding to climate change.
- Q5. Ans (b).** *Prosopis juliflora* ('vilayati kikar') is an invasive alien species that overruns native growth in degraded ranges like the Aravallis, illustrating why plantation is not ecological restoration.
- Q6. Ans (b).** GeM is an online public-procurement platform. Critics argue its mandatory use delays scientific procurement and pushes researchers toward sub-standard equipment.
- Q7. Ans (d).** All three are correct: GERD is ~0.64% of GDP; ANRF (2023 Act) was set up to boost research; and the UGC Act, 1956 governs university-level recruitment, cited as an archaic bottleneck.
- Q8. Ans (b).** Open-weight models let organisations run and fine-tune the model within approved environments without sending data to an external provider — improving data residency and reducing vendor lock-in.
- Q9. Ans (b).** 'Token sovereignty' refers to retaining data, inference and the resulting value within domestic/national infrastructure — central to data residency and India's push for indigenous AI.
- Q10. Ans (d).** All three are correct: the IndiaAI Mission targets sovereign compute and indigenous models; the DPDP Act, 2023 anchors data protection; and Sarvam is an India-hosted managed service reflecting the 'token sovereignty' trend.

Compiled by **Sapna Chauhan** · Vedanta Coaching Academy & Library · The Hindu Analysis, 18 August 2026