

18<sup>th</sup> February 2026: DSC

## NGT Clears ₹92,000-Crore Great Nicobar Island Mega Project

**Environment • Maritime Security • EIA Regime**

**Source: The Hindu**

### A. Issue in Brief

The National Green Tribunal (NGT) has dismissed petitions against the 2022 Environmental Clearance (EC) granted to the ₹92,000-crore Great Nicobar Island mega-infrastructure project, observing that there is “no good ground to interfere” while underscoring the need for strict compliance with EC conditions. The project, which includes a transshipment port, an international airport, a power plant, and a township on Great Nicobar Island, has been criticised for environmental risks including impacts on coral reefs, leatherback turtle nesting sites, and its proximity to ecologically sensitive areas.

#### ◆ **Relevance:**

**GS-2 (Polity & Governance):** Environmental governance, role and limits of NGT, Centre–State–Judiciary interplay, transparency versus national security claims.

**GS-3 (Environment, Infrastructure & Security):** EIA regime and compliance, biodiversity conservation, coastal regulation, strategic infrastructure in maritime zones (SAGAR, Indo-Pacific).

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### B. What the NGT Held

- The NGT relied on a High-Powered Committee (HPC) report examining coral reefs, turtle nesting habitats, and protected zones, holding that the Terms of Reference for EIA and impact studies were valid.
- It accepted the Government’s stand that the HPC report contains strategic/defence-sensitive information, justifying limited public disclosure.
- Emphasising a “balanced approach,” the Tribunal allowed the project to proceed given strategic considerations while upholding compliance with the Island Coastal Regulation Zone (ICRZ), 2019 safeguards.
- MoEFCC was directed to ensure coral protection/regeneration efforts and to formulate an implementation plan; it also bears responsibility to prevent shoreline erosion.

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### C. Constitutional / Legal Dimension

- **Article 48A & Article 51A(g):** Directive Principles and Fundamental Duties impose responsibilities on the State and citizens for environmental protection.
- **EIA Notification, 2006:** Mandates three-season baseline environmental data; however, the government justified deviation on geomorphological grounds in this case.
- **Forest Clearance & Calcutta HC:** Forest clearance issues relating to the project are under scrutiny by the Calcutta High Court, demonstrating multi-forum adjudication.
- **ICRZ 2019:** Regulates coastal and island development with built-in safeguards for fragile ecosystems, now central to compliance oversight.

#### D. Environmental Dimension

- Great Nicobar Island hosts tropical rainforests, coral reef ecosystems, mangroves, and endemic wildlife; adjacent marine habitats are critical nesting grounds for leatherback turtles (critically endangered).
  - Environmental risk vectors include habitat fragmentation, dredging-induced turbidity affecting reef systems, and shoreline morphology alteration.
  - Proposed mitigations include coral transplantation and regeneration, construction scheduling to avoid sensitive periods, and shoreline erosion management — effectiveness is contingent on scientific design and monitoring integrity.
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#### E. Governance / Administrative Dimension

- **Strategic Rationale:** The site's location near key East–West shipping lanes strengthens India's maritime logistics, aligns with the SAGAR vision, and enhances Indo-Pacific presence.
  - **Compliance Challenge:** Ensuring credible Monitoring, Reporting, and Verification (MRV) of EC conditions over protracted project timelines is administratively challenging.
  - **Transparency vs Security:** Limited disclosure to protect strategic interests may undermine public trust and weaken participatory environmental governance.
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#### F. Economic / Security Dimension

- The project aims to position India as a regional transshipment hub, potentially reducing dependence on foreign ports and enhancing trade competitiveness.
  - Infrastructure build-out could catalyse island connectivity, tourism, and employment; however, ecological costs and economic realism must guide evaluations.
  - Dual-use civil and defence logistics value enhances the national security case, but requires careful risk management of ecological externalities.
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#### G. Social / Ethical Dimension

- Concerns persist regarding displacement of local and indigenous communities, cultural disruption, and livelihood transitions without adequate safeguards.
  - Ethical debate centres on balancing national infrastructure goals with ecological stewardship; inter-generational equity is especially salient in ecologically fragile island contexts.
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#### Key Criticisms / Gaps

- **Baseline Data Adequacy:** Reliance on single-season environmental study is contested; marine and coastal ecosystems are seasonally dynamic.
- **Cumulative Impact Assessment:** Combined effects across the port, airport, township, and power plant may be inadequately specified in project documentation.

- **Carrying Capacity & Disaster Risk:** Small island capacity limits and vulnerability to cyclones and tsunamis necessitate robust modelling and preparedness planning.
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### Way Forward

- Constitute **independent scientific oversight panels** to monitor coral and turtle safeguards; issue public summaries excluding sensitive details.
  - Deploy **real-time environmental monitoring** systems (turbidity, reef health indices, satellite shoreline change mapping).
  - Adopt a phased implementation with **adaptive management triggers** — pause or modify works if ecological thresholds are breached.
  - Strengthen **community consultations**, benefit-sharing frameworks, and grievance redress mechanisms.
  - Integrate **disaster-resilient design, effective waste management, and water sustainability** into project planning.
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### Exam Orientation

#### Prelims Pointers:

- NGT is constituted under the **National Green Tribunal Act, 2010** for expeditious environmental justice.
- **ICRZ 2019** regulates coastal and island development norms.
- **EIA 2006** generally mandates multi-season baseline environmental data, but case-specific justifications may be argued.
- **Leatherback Turtle:** One of the largest sea turtle species; considered **critically endangered**.

#### Mains Practice Question (15 Marks):

“Strategic infrastructure in ecologically fragile regions demands a calibrated balance between national security imperatives and environmental sustainability.” Discuss with reference to the Great Nicobar Island project.

#### Separate Classification & Census Enumeration for DNTs

#### Social Justice • Census Policy • Affirmative Action

Source: The Hindu

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### A. Issue in Brief

The Union government has indicated that Denotified, Nomadic and Semi-Nomadic Tribes (DNTs/NTs/SNTs) may be enumerated in the 2027 Census; however, there is no clarity regarding the methodology, prompting strong demands for a **separate Census column** exclusively for DNTs.

DNT communities argue that without a distinct enumeration and certification framework, their long-standing **historical stigma, socio-economic marginalisation, and policy invisibility** will persist.

Multiple commissions have repeatedly emphasised that accurate identification, welfare targeting, and affirmative action design are not feasible without a comprehensive and disaggregated Census count.

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### ✦ Relevance

#### **GS-1 (Indian Society):**

Marginalised communities, nomadic lifestyles, colonial stigma, social exclusion, caste-based vulnerability.

#### **GS-2 (Polity & Governance):**

Census policy, Articles 14/15/46, affirmative action architecture, welfare targeting, commission recommendations.

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### **B. Who are DNTs?**

Denotified Tribes are communities previously notified as “criminal tribes” under the **Criminal Tribes Act, 1871**, which authorised colonial authorities to register, surveil, and restrict the movement of entire communities based on hereditary stereotypes.

The Act was repealed in 1952 after Independence, resulting in “denotification.” However, several States enacted **Habitual Offenders Acts**, continuing police scrutiny under a different legal label.

The colonial doctrine that linked “criminality” with caste and heredity entrenched a deep social stigma that continued even after formal repeal, shaping policing practices and public perception.

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### **C. Enumeration History**

- “Criminal tribes” were explicitly enumerated in the **1911 and 1931 Censuses**.
- The **1931 Census** was the last Census to collect such data.
- Post-Independence, India discontinued caste enumeration except for SCs and STs; no dedicated DNT enumeration has been undertaken since.

The **Idate Commission (2017)** identified nearly **1,200 DNT communities**, noting that:

- Most are distributed within SC/ST/OBC categories.
- Approximately **268 communities remain unclassified**, lacking formal recognition.

An Anthropological Survey of India study commissioned by NITI Aayog recommended classifications for these 268 groups; however, the recommendations remain unimplemented.

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### **D. Current Policy Status**

- Many DNT communities are listed under SC/ST/OBC categories as “Vimukt Jatis,” providing partial access to reservations and welfare schemes.

- The **SEED Scheme for DNTs** (education, livelihood, housing, health) was launched with a ₹200 crore outlay; utilisation rates have been relatively low.
  - A key administrative bottleneck is the absence of standardised **DNT certification mechanisms** across States. Only select districts issue formal DNT certificates.
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### **E. Constitutional / Legal Dimension**

- **Article 14:** Equality before law.
- **Article 15:** Permits affirmative action for socially and educationally backward classes.
- **Article 46:** Directs the State to promote educational and economic interests of weaker sections.

Core debate:

Whether DNTs require a **distinct constitutional category** or improved targeting within the existing SC/ST/OBC framework.

The issue touches upon principles of substantive equality and corrective justice.

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### **F. Social Justice Dimension**

- Persistent stigma and police profiling continue due to colonial criminalisation legacy.
  - Many nomadic groups experience extreme landlessness, mobility-based exclusion, low literacy, and limited welfare access.
  - Internal heterogeneity exists — some communities are relatively advanced, while others are deeply marginalised — necessitating possible sub-classification.
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### **G. Governance / Administrative Challenges**

- Absence of a unified national definition creates classification ambiguity.
  - Overlap with SC/ST/OBC lists generates data duplication and targeting complexity.
  - Census design must account for mobile populations to avoid both double counting and undercounting.
  - Administrative capacity constraints may hinder accurate enumeration.
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### **Key Concerns**

- Without clear enumeration, welfare targeting remains fragmented.
  - Political sensitivity surrounding caste-based data collection complicates reform.
  - Risk of policy dilution if DNT issues are subsumed within broader OBC frameworks.
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### **Way Forward**

- Conduct a time-bound national identification and enumeration exercise with clear definitions for DNT, NT, and SNT categories.

- Standardise and digitise DNT certification through coordinated Centre–State frameworks.
  - Improve SEED scheme delivery with **portable entitlements** suitable for mobile populations.
  - Consider sub-classification to address uneven backwardness.
  - Expand education, housing, and livelihood schemes tailored to nomadic lifestyles.
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## Exam Orientation

### Prelims Pointers

- Criminal Tribes Act, 1871 was repealed in 1952.
- 1931 Census was the last to enumerate such communities.
- Many DNTs are today included in SC/ST/OBC lists, but several remain unclassified.
- SEED Scheme targets welfare of DNT communities.

### Mains Practice Question

“Historical stigma and statistical invisibility continue to shape the marginalisation of Denotified and Nomadic Tribes in India.” Examine the need, constitutional basis, and challenges of their separate enumeration in the Census.

### 🏛️ SC to Re-examine Legality of Ex Post Facto Environmental Clearances

#### Judicial Review • Precautionary Principle • EIA Framework

Source: The Hindu

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#### A. Issue in Brief

The Supreme Court has agreed to re-examine the legality of granting “**ex post facto**” **Environmental Clearance (EC)** — that is, approval granted after a project has already commenced construction or operations.

A three-judge Bench observed that earlier precedents may not have been fully considered and referred the issue to a larger Bench, signalling significant constitutional and environmental implications.

The case arises from challenges to government actions that allowed retrospective regularisation of projects which began operations without obtaining prior environmental clearance.

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#### 📌 Relevance

##### GS-2 (Polity & Judiciary):

Judicial review, constitutional environmentalism, separation of powers, role of Supreme Court.

##### GS-3 (Environment):

Precautionary principle, EIA regime, sustainable development, rule of environmental law.

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## B. What is Ex Post Facto Environmental Clearance?

- Ex post facto EC refers to environmental approval granted **after** project initiation, instead of obtaining clearance beforehand as required under the **EIA Notification, 2006**.
  - It effectively regularises violations, often with additional penalties or safeguards.
  - Critics argue that it transforms environmental governance from a preventive model into a post-damage regulatory framework.
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## C. Constitutional / Legal Dimension

- **Article 21:** Right to life includes the right to a clean and healthy environment (expanded through judicial interpretation).
- **Precautionary Principle:** State must act to prevent environmental harm even in the absence of complete scientific certainty (*Vellore Citizens Welfare Forum case*).
- **Polluter Pays Principle:** Polluter bears the cost of environmental remediation.
- In *Common Cause v. Union of India*, the Supreme Court held that ex post facto EC is generally contrary to environmental jurisprudence except in rare and exceptional cases.

### Key Legal Question:

Can administrative notifications dilute statutory safeguards designed to prevent irreversible environmental damage?

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## D. Governance Dimension

- Prior EC ensures environmental impact assessment, public consultation, and mitigation planning before irreversible damage occurs.
  - Allowing retrospective approvals weakens regulatory deterrence.
  - It may create a **moral hazard**, where firms proceed without compliance expecting later regularisation.
  - Undermines institutional credibility of environmental authorities.
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## E. Environmental Implications

- Environmental degradation (deforestation, pollution, biodiversity loss) is often irreversible.
  - Post-facto clearance defeats anticipatory environmental governance.
  - It undermines India's commitments under SDGs 12 (Sustainable Consumption), 13 (Climate Action), and 15 (Life on Land).
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## F. Economic Dimension

Industry argues that:

- Ex post facto EC prevents project shutdowns and protects sunk investments.
- Sudden closure may lead to job losses and financial instability.

However:

- Regulatory dilution can weaken ESG credibility of Indian markets.
  - Strong rule of law enhances long-term investor confidence.
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### **G. Ethical Dimension**

- Developmental pragmatism versus environmental justice.
  - Unfairness toward compliant firms that incur environmental compliance costs.
  - Inter-generational equity: Future generations bear costs of present regulatory dilution.
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### **Key Concerns**

- Normalisation of violations erodes environmental rule of law.
  - Public consultation becomes redundant if clearance is retrospective.
  - Risk of regulatory capture.
  - Weakens precautionary environmental governance architecture.
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### **Way Forward**

- Reaffirm prior EC as the mandatory norm; permit post-facto approval only in narrowly defined, exceptional cases.
  - Strengthen digital compliance tracking and real-time monitoring.
  - Impose strong financial penalties and restoration liabilities.
  - Fast-track EC processes to reduce compliance delays.
  - Enhance capacity of SEIAAs and MoEFCC technical bodies.
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### **Exam Orientation**

#### **Prelims Pointers**

- EIA Notification 2006 mandates prior environmental clearance.
- Precautionary Principle and Polluter Pays Principle are recognised in Indian jurisprudence.
- Article 21 includes environmental protection through judicial interpretation.

#### **Mains Practice Question**

“Ex post facto environmental clearances undermine the preventive character of environmental governance.” Critically analyse in light of constitutional environmental jurisprudence.

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### **SC Refuses Stay on RTI Amendments Linked to DPDP Act**

**Privacy vs Transparency • Fundamental Rights Balance • Data Governance**

**Source: Indian Express**

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## A. Issue in Brief

The Supreme Court declined to stay amendments affecting the Right to Information (RTI) framework introduced through the **Digital Personal Data Protection (DPDP) Act, 2023**, but agreed to examine the constitutional balance between privacy and transparency.

Petitioners argue that amendments dilute access to information by expanding the exemption for “personal information” under the RTI Act.

The Court observed that the matter involves competing fundamental rights requiring careful constitutional balancing.

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### ✦ Relevance

#### GS-2 (Polity & Governance):

Right to Information, data protection law, fundamental rights balancing, accountability mechanisms.

#### GS-3 (Governance & Digital Economy):

Data governance, regulatory frameworks, transparency in public administration.

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## B. What Changed?

- Amendment to **Section 8(1)(j)** of RTI Act strengthens exemption for “personal information.”
  - Disclosure may now be restricted unless legally justified under the DPDP framework.
  - Petitioners argue that this weakens the earlier public interest override provision.
  - Risk: Authorities may deny information citing privacy even in corruption or public accountability matters.
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## C. Constitutional Dimension

- **Article 19(1)(a)**: RTI derives from freedom of speech and expression (Right to Know doctrine).
- **Article 21**: Right to privacy recognised as fundamental in *Puttaswamy (2017)*.

Core Constitutional Question:

How should courts balance transparency (RTI) and privacy (data protection) when both are fundamental rights?

Judicial balancing requires:

- Proportionality test
  - Necessity standard
  - Least restrictive alternative approach
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## D. Governance Implications

- RTI is a cornerstone of participatory democracy and accountability.
- Data protection law aims to safeguard individual dignity and informational autonomy.

- Public Information Officers must now reconcile two overlapping legal regimes — increasing interpretative complexity.
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### **E. Democratic / Institutional Impact**

- RTI has historically exposed corruption, ghost beneficiaries, and policy failures.
  - Over-broad privacy exemptions risk creating a “culture of secrecy.”
  - At the same time, unchecked disclosure may violate individual dignity and personal data rights.
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### **F. Ethical Dimension**

- Transparency in public life versus protection of personal dignity.
  - Public officials acting in official capacity should face higher transparency standards.
  - Principle of minimum necessary disclosure: reveal what serves public interest, protect what is purely private.
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### **Key Concerns**

- Risk of blanket denial of information.
  - Potential dilution of public interest override.
  - Increased litigation due to interpretative conflicts.
  - Administrative confusion at grassroots RTI levels.
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### **Way Forward**

- Issue harmonised guidelines clarifying privacy–RTI interface.
  - Narrowly define “personal information” in official-capacity matters.
  - Develop structured proportionality checklist for disclosure decisions.
  - Capacity-building for Public Information Officers.
  - Periodic judicial review to safeguard RTI’s core objective.
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### **Exam Orientation**

#### **Prelims Pointers**

- RTI derives from Article 19(1)(a).
- Privacy recognised as fundamental right under Article 21 (Puttaswamy).
- Section 8 of RTI Act lists exemptions.
- DPDP Act 2023 regulates digital personal data processing.

#### **Mains Practice Question**

“Data protection and transparency are both foundational to democracy but may conflict in implementation.” Discuss how India should balance the Right to Information with the Right to Privacy

### ⚡ GEAPP Launches India Grids of the Future Accelerator

**Power Grid Modernisation • DISCOM Reform • Smart Grids • Energy Transition**

**Source: Down to Earth**

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#### A. Issue in Brief

The Global Energy Alliance for People and Planet (GEAPP) launched the **India Grids of the Future Accelerator (2026)** to strengthen digital, financial, and institutional capacity for integrating large-scale renewable energy and storage.

GEAPP committed up to **\$25 million by 2028**, aiming to unlock **\$100 million by 2030** through blended finance mechanisms. The initiative aligns with India’s **Viksit Bharat 2047 vision** and long-term clean energy transition goals.

The programme is supported by the **All India DISCOM Association** and the **International Solar Alliance**, with initial champion utilities identified in Delhi and Rajasthan.

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#### ◆ Relevance

##### **GS-3 (Infrastructure & Energy):**

Power sector reforms, renewable integration, grid stability, storage technologies.

##### **GS-3 (Environment):**

Climate commitments, energy transition, decarbonisation pathway.

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#### B. Structural Context: Why Grid Reform Matters

India targets **500 GW non-fossil capacity by 2030**, but generation expansion alone is insufficient without grid readiness.

DISCOMs remain the weakest link in India’s power value chain due to:

- High AT&C losses
- Tariff distortions
- Payment delays
- Financial stress

Grid modernisation is therefore a binding constraint in achieving renewable transition goals.

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#### C. Core Design – The “D4 Framework”

##### 1 Digitalisation

- Digital twins of grid infrastructure
- Smart meters and real-time data analytics
- AI-driven demand forecasting
- Loss reduction and predictive maintenance

## **2 Distributed Energy Resources (DERs)**

- Rooftop solar
- Battery storage
- Microgrids
- EV integration

DER integration shifts from centralised generation to decentralised participation.

## **3 Democratisation**

- Consumers as “prosumers”
- Demand-response systems
- Time-of-day pricing
- Peer-to-peer energy trading

## **4 Development of Innovation Ecosystem**

- Startup participation
- Storage innovation (including non-lithium technologies)
- Grid management software solutions

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### **D. Economic Dimension**

- Modern grids reduce transmission and billing losses.
- Improve DISCOM viability and investor confidence.
- Enable reliable electricity supply for manufacturing, data centres, and digital economy growth.
- Blended finance lowers risk and crowds in private capital.

Reliable grid infrastructure underpins industrial competitiveness.

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### **E. Environmental & Climate Dimension**

- Grid flexibility is essential to integrate intermittent solar and wind power.
- Reduces renewable curtailment.
- Facilitates faster coal displacement.
- Supports India’s Net Zero 2070 commitment.

Storage + smart grids = lower emissions intensity per unit of electricity.

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### **△ Challenges**

- Persistent DISCOM financial stress.
  - Tariff politics and cross-subsidisation.
  - Cybersecurity vulnerabilities due to digitalisation.
  - Uneven reform appetite across States.
  - Regulatory lag in enabling storage and peer-to-peer trading markets.
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### Way Forward

- Align with Revamped Distribution Sector Scheme (RDSS).
  - Accelerate smart metering rollouts.
  - Introduce cost-reflective tariffs with targeted subsidies.
  - Develop grid-scale storage ecosystem.
  - Create cybersecurity standards for smart grids.
  - Promote time-of-day tariffs and demand response markets.
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### Exam Orientation

#### Prelims Pointers

- International Solar Alliance: India–France initiative.
- DISCOMs manage last-mile distribution.
- DERs include rooftop solar, storage, EVs, microgrids.
- Blended finance combines public and private capital.

#### Mains Practice Question

“India’s clean energy transition depends not only on generation capacity but on grid reform.”  
Discuss in light of recent grid modernisation initiatives.

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### Agro-Biodiversity Lessons from Bird Diversity Changes in Pusa, Bihar

**Agro-Ecology • IPM • Climate-Resilient Agriculture**

**Source: Down to Earth**

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#### A. Issue in Brief

Pusa, Bihar — a historic agricultural research centre — offers a rare century-long comparison of bird diversity trends, linking colonial-era ornithological records with present-day ecological surveys.

Comparative analysis between early 20th-century data and 2021–22 surveys reveals major shifts in avian communities, with implications for pest control, crop resilience, and sustainable farming.

The case highlights how legacy ecological data combined with modern digital tools can inform agro-biodiversity conservation strategies.

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◆ **Relevance**

**GS-3 (Environment & Agriculture):**

Agro-biodiversity, ecosystem services, sustainable farming, IPM.

**GS-1 (Geography & Society):**

Human–environment interaction.

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**B. Historical Scientific Baseline**

C.W. Mason examined stomach contents of **1,325 birds across 110 species** around Pusa.

Key findings:

- ~ $\frac{2}{3}$  of 55,000 recorded food items were insects.
- Included crop pests such as weevils, grasshoppers, and rice hispa.

Functional groups identified:

- Insectivores (drongos, swifts)
- Omnivores (mynas)
- Graminivores (starlings)
- Predators (shrikes)

This established birds as natural pest regulators.

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**C. Present-Day Scenario (2021–22)**

- Only ~50 species recorded.
- ~30.9% of historically documented species persist.
- ~69% decline in earlier species, especially scavengers like vultures.
- 68% current species are long-term survivors.
- 32% are new colonisers, reflecting ecological shifts.

Decline in insectivores and raptors weakens biological pest control.

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**D. Ecological Implications**

Birds provide ecosystem services:

- Pest control
- Seed dispersal
- Nutrient cycling

Loss of insectivores increases pesticide dependence, creating negative feedback loops affecting soil and water health.

Agro-biodiversity enhances resilience against climate variability and pest outbreaks.

### **E. Agricultural & Economic Dimension**

Integrating birds into **Integrated Pest Management (IPM)**:

- Reduces chemical input costs.
- Improves yield stability.
- Enhances export competitiveness via low-residue produce.

On-farm biodiversity measures:

- Perches and hedgerows
  - Native fruit trees
  - Refuge patches
  - Mixed cropping systems
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### **F. Science & Technology Dimension**

- Digitisation of legacy data improves longitudinal biodiversity analysis.
- Citizen-science platforms like eBird expand datasets.
- AI-based bioacoustics improves monitoring accuracy.

Long-term datasets strengthen evidence-based agro-ecological planning.

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### **Way Forward**

- Restore bird habitats within farmlands.
  - Promote IPM and reduce pesticide intensity.
  - Institutionalise ecological monitoring at agricultural research centres.
  - Incentivise biodiversity-friendly farming via eco-labelling and market premiums.
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### **Exam Orientation**

#### **Prelims Pointers**

- IPM emphasises biological control methods.
- Birds are key providers of ecosystem services in agriculture.
- Citizen-science platforms support biodiversity monitoring.

#### **Mains Practice Question**

“Agro-biodiversity is central to climate-resilient agriculture.” Discuss with reference to long-term ecological evidence from agricultural landscapes.

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### **◆ Africa’s Strategic Minerals & Global Supply-Chain Realignments**

### **A. Issue in Brief**

The Africa Finance Corporation's 2026 report — *Compendium of Africa's Strategic Minerals* — argues that global geopolitical fragmentation and supply-chain realignment have elevated the strategic importance of African minerals.

Africa holds an estimated **\$29.5 trillion in mine-site mineral wealth**, roughly 20% of global total, yet captures limited downstream value due to export of raw ores.

The report recommends shifting from a raw-material exporter to a selective processor at strategic supply-chain chokepoints.

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### **◆ Relevance**

#### **GS-2 (International Relations):**

Resource geopolitics, China+1 strategy, Global South diplomacy.

#### **GS-3 (Economy & Security):**

Critical minerals, industrial policy, supply-chain resilience, energy transition.

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### **B. Core Strategic Argument**

Africa's challenge is "conversion, not geology."

Constraints include:

- Weak infrastructure
- Limited processing capacity
- Fragmented markets

China currently dominates:

- ~90% rare earth processing
- Battery-grade graphite refining
- Manganese processing

Advanced economies are seeking diversification.

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### **C. Economic Dimension**

Value addition potential:

- \$2.8T iron ore → \$25.4T steel
- \$874B bauxite → \$15.4T aluminium

Current export model results in:



- Low-value capture
- Limited job creation
- Forex vulnerability

Beneficiation can support industrialisation and export diversification.

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#### **D. Infrastructure Constraint**

Processing requires:

- Reliable electricity
- Rail and port connectivity
- Industrial clusters

Rarely do mineral resource, infrastructure, and market demand co-exist geographically.

Infrastructure investment is therefore a multiplier for mineral value capture.

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#### **E. Geopolitical Dimension**

Critical minerals now tied to:

- Defence manufacturing
- Clean energy technologies
- Semiconductor production

Africa's non-aligned geopolitical position provides leverage in a multipolar world.

Minerals diplomacy is becoming central to Global South strategy.

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#### **F. Regional Integration**

National markets often too small for processing economies of scale.

AfCFTA (African Continental Free Trade Area) can:

- Aggregate markets
- Facilitate regional value chains
- Improve investment attractiveness

Success examples:

- Morocco (phosphates)
  - Copperbelt region (copper)
  - North Africa (steel)
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#### **G. Gold as a Macro-Stabiliser**

Africa holds >\$5T gold resources.

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Potential macro benefits:

- Strengthen forex reserves
- Reduce dollar dependency
- Stabilise domestic currencies

Ghana's GoldBod reform cited as an example of institutional modernisation.

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### ▲ Governance Challenges

- Outdated geological data
  - Policy inconsistency
  - Regulatory uncertainty
  - Risk of resource-curse dynamics
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### Way Forward

- Treat geological data as strategic infrastructure.
  - Invest in energy and transport corridors.
  - Promote selective beneficiation at chokepoints.
  - Leverage AfCFTA for regional mineral clusters.
  - Strengthen transparency and governance standards.
  - Use gold strategically for macro-financial stability.
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### Exam Orientation

#### Prelims Pointers

- Critical minerals central to energy transition.
- Beneficiation = mineral value addition.
- Supply-chain concentration poses geopolitical risk.

#### Mains Practice Question

“Control over critical mineral supply chains is emerging as a determinant of geopolitical power.” Analyse in the context of Africa's mineral potential.

18<sup>th</sup> February 2026: Daily MCQs

**Q1. With reference to Ex Post Facto Environmental Clearances (EC) in India, consider the following statements:**

1. The EIA Notification, 2006 mandates prior environmental clearance for listed projects.
2. The Precautionary Principle forms part of Indian environmental jurisprudence.
3. Ex post facto environmental clearance has been constitutionally mandated by the Supreme Court in all industrial cases.

- The Polluter Pays Principle requires the polluter to bear the cost of environmental remediation.

Which of the statements given above are correct?

- A) 1 and 2 only
- B) 1, 2 and 4 only
- C) 2, 3 and 4 only
- D) 1, 2, 3 and 4

**Answer: B**

**Explanation:**

- Statement 1 – Correct. Prior EC is mandatory under EIA Notification, 2006.
- Statement 2 – Correct. Recognised in *Vellore Citizens Welfare Forum case*.
- Statement 3 – Incorrect. Supreme Court has generally disfavoured ex post facto EC except in rare circumstances.
- Statement 4 – Correct. Polluter Pays Principle is embedded in Indian environmental law.

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**Q2. Regarding the Right to Information (RTI) and the Right to Privacy in India, consider the following statements:**

- The Right to Information flows from Article 19(1)(a) of the Constitution.
- The Right to Privacy was declared a fundamental right under Article 21.
- Section 8 of the RTI Act deals with exemptions from disclosure.
- The Digital Personal Data Protection Act, 2023 abolishes the RTI Act.

Which of the statements given above are correct?

- A) 1, 2 and 3 only
- B) 1 and 2 only
- C) 2, 3 and 4 only
- D) 1, 2, 3 and 4

**Answer: A**

**Explanation:**

- Statement 1 – Correct. RTI derives from freedom of speech and expression.
- Statement 2 – Correct. Recognised in *Puttaswamy (2017)*.
- Statement 3 – Correct. Section 8 lists exemptions.
- Statement 4 – Incorrect. DPDP Act amends certain aspects but does not abolish RTI.



**Q3. With reference to India's power sector and grid reforms, consider the following statements:**

1. Distribution companies (DISCOMs) handle last-mile electricity delivery.
2. Distributed Energy Resources (DERs) include rooftop solar and battery storage systems.
3. Blended finance refers exclusively to public sector funding of renewable projects.
4. India has committed to achieving 500 GW of non-fossil fuel capacity by 2030.

Which of the statements given above are correct?

- A) 1, 2 and 4 only  
B) 1 and 3 only  
C) 2 and 4 only  
D) 1, 2, 3 and 4

**Answer: A**

**Explanation:**

- Statement 1 – Correct. DISCOMs manage distribution.
- Statement 2 – Correct. DERs include decentralised generation like rooftop solar and storage.
- Statement 3 – Incorrect. Blended finance combines public, private, and philanthropic capital.
- Statement 4 – Correct. Part of India's Panchamrit commitments.

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**Q4. Consider the following statements regarding Denotified and Nomadic Tribes (DNTs):**

1. The Criminal Tribes Act, 1871 classified certain communities as hereditary criminals.
2. The Criminal Tribes Act was repealed after Independence.
3. All DNT communities are currently classified under Scheduled Castes or Scheduled Tribes.
4. The 1931 Census was the last Census to enumerate criminal tribes explicitly.

Which of the statements given above are correct?

- A) 1, 2 and 4 only  
B) 1 and 3 only  
C) 2, 3 and 4 only  
D) 1, 2, 3 and 4

**Answer: A**

**Explanation:**

- Statement 1 – Correct. CTA 1871 labelled certain communities.

- Statement 2 – Correct. Repealed in 1952.
- Statement 3 – Incorrect. Not all DNTs are classified under SC/ST; some remain unclassified.
- Statement 4 – Correct. 1931 Census was last to enumerate such categories.

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**Q5. With reference to critical minerals and global supply chains, consider the following statements:**

1. Critical minerals are essential for renewable energy technologies and defence applications.
2. China currently dominates global rare earth processing capacity.
3. Beneficiation refers to the export of raw ores without processing.
4. Supply chain concentration can create geopolitical vulnerabilities.

Which of the statements given above are correct?

- A) 1, 2 and 4 only
- B) 2 and 3 only
- C) 1 and 3 only
- D) 1, 2, 3 and 4

**Answer: A**

**Explanation:**

- Statement 1 – Correct. Used in batteries, semiconductors, defence systems.
- Statement 2 – Correct. China dominates rare earth processing (~90%).
- Statement 3 – Incorrect. Beneficiation means value addition through processing.
- Statement 4 – Correct. Concentration increases geopolitical leverage and risk.
- **Mains Practice Question**
- “Control over critical mineral supply chains is emerging as a determinant of geopolitical power.” Analyse in the context of Africa’s mineral potential. 10 marks.