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EDITORIAL ANALYSIS

The Great Indian Bustard and India's Climate-Biodiversity Tightrope

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GS3

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INTERVIEW ANGLE

"The GIB is dying from solar energy infrastructure in the Thar Desert — the same desert India needs for its 60% non-fossil energy target. How should India resolve a contradiction written into its development model?"

WHY IN NEWS

A Great Indian Bustard chick was successfully hatched in Gujarat's Kutch on March 26, 2026, via a 770-km inter-state egg transfer from Rajasthan — the first successful GIB hatching in nearly a decade. The global GIB population stands at fewer than 150 individuals. The conservation breakthrough comes even as the Thar Desert — GIB's primary habitat — hosts India's largest solar energy installations.

THE RAREST OF GOOD NEWS

The hatching of a GIB chick in Gujarat — using eggs from Rajasthan's captive breeding programme, transported 770 km in 19 hours, incubated at 37.5°C, and successfully hatched — is a conservation triumph that deserves unqualified celebration. Gujarat had only three female GIBs and no males; natural reproduction was impossible. The "jumpstart approach" is now a proven technique that could be replicated in other areas where demographic Allee effects have collapsed breeding viability.

With fewer than 150 GIBs globally and roughly 73 in Rajasthan's captive programme, every hatching is a statistical lifeline. The Wildlife Institute of India and the state forest departments have demonstrated that with the right institutional commitment and inter-state coordination, even a Critically Endangered species at the edge of extinction can be pulled back.

THE CONTRADICTION THAT WON'T GO AWAY

Yet the celebration must be accompanied by honesty about the structural contradiction. The Thar Desert — specifically Jaisalmer, Barmer, and Bikaner districts in Rajasthan — is simultaneously India's best solar zone (among the highest irradiance globally) and the last viable wild habitat of the Great Indian Bustard. The species' primary cause of mortality in the wild is collision with overhead power lines that transmit solar and wind energy.

India's updated NDC (2026) commits to 60% non-fossil electricity by 2035. Achieving this requires massive solar capacity expansion in precisely the areas where GIB survives. The Supreme Court in 2021 ordered underground cabling in core GIB areas, then modified its order when the Ministry of New and Renewable Energy raised concerns about solar viability. The modification was pragmatic but left no clear resolution — instead creating a case-by-case adjudication approach that satisfies neither conservationists nor energy planners.

TECHNOLOGY AS PARTIAL SOLUTION

Underground cabling for high-voltage DC transmission (HVDC) is technically feasible but expensive — roughly 10–15 times the cost of overhead lines. Bird flight diverters (spinning devices attached to power lines) reduce collisions but do not eliminate them. Drone-monitored exclusion zones around GIB habitat can route solar infrastructure around critical areas. None of these are silver bullets, but combined with habitat restoration and captive breeding augmentation, they could reduce mortality enough to stabilise the wild population.

The Abu Dhabi partnership — leveraging Houbara bustard captive breeding expertise — has been valuable. As the GIB captive population in Rajasthan grows (currently ~73), augmentation of wild populations through soft-release programmes becomes feasible — but only if wild habitat is adequately protected.

THE POLICY GAP

India has no mechanism for systematically resolving climate-biodiversity conflicts at the project planning stage. Environmental Impact Assessments (EIA) are supposed to flag such conflicts — but GIB habitat is not formally demarcated as wildlife sanctuary or national park in many solar project areas. The legal protection is absent precisely where habitat exists.

A dedicated **GIB Habitat Regulation Zone** — analogous to Coastal Regulation Zones (CRZ) for coastlines or Eco-Sensitive Zones (ESZ) around protected areas — would give land use planners a statutory basis for routing infrastructure around critical areas. The Wildlife (Protection) Amendment Act 2022 strengthened species protections but did not create such a zone.

UPSC RELEVANCE

GIB (*Ardeotis nigriceps*), Critically Endangered; global population < 150; Project GIB 2016; WII; CMS COP15 (Brazil 2026) — GIB added to Appendix I; India CMS COP13 (Gandhinagar 2020).

MAINS GS-3:

"The Great Indian Bustard faces extinction from the same renewable energy infrastructure India needs for its NDC targets. Critically examine this climate-biodiversity conflict and suggest a resolution."

ESSAY:

"Saving the Great Indian Bustard is not just about a bird — it is about whether India's development model can make space for biodiversity."

📌 FACTS CORNER — KNOWLEDGEPEDIA

GIB CONSERVATION 2026:

Global population: < 150 individuals

Rajasthan captive: ~73 birds (Sam + Ramdevra, Jaisalmer)

2026 hatch: Kutch, Gujarat; egg from Rajasthan; 770 km in ~19 hours

Technique: Jumpstart Approach (inter-state egg transfer)

Gujarat GIBs before: 3 females, 0 males

KEY THREATS:

Overhead power lines: primary adult mortality cause (~18 birds/year est.)

Habitat conversion: agriculture, solar/wind projects, human settlements

Supreme Court 2021: Underground cabling ordered in core GIB areas; modified for solar viability

LEGAL PROTECTION:

IUCN: Critically Endangered

CITES: Appendix I

WPA 1972: Schedule I

CMS: Appendix I (added COP15, Brazil 2026)

INDIA NDC CONFLICT:

Thar Desert: Best solar zone (Jaisalmer, Barmer, Bikaner) = last wild GIB habitat

60% non-fossil target by 2035 requires massive Thar expansion

No statutory GIB Habitat Regulation Zone exists

OTHER RELEVANT FACTS:

Abu Dhabi (IFHC): Partner in GIB captive breeding (Houbara bustard expertise)

Wildlife (Protection) Amendment Act 2022: Strengthened species protections

Bird flight diverters: Spinning devices on power lines; reduce but do not eliminate collisions

HVDC underground cabling: 10–15x more expensive than overhead lines

Sources: Wildlife Institute of India , MoEFCC , The Hindu

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