THE ROYAL INSTITUTE (TRI)

A Centre for Leadership & Institutional Strategy
A Royal Institute Strategic Policy Agenda Release | PB-02/2026

Rethinking Protected Areas

Natural Capital, Territorial Security and Green Growth in Nigeria's Mineral Landscapes

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Executive Overview

Across fragile regions of Nigeria and West Africa, conservation territories are intersecting with insecurity dynamics in ways that demand strategic reassessment. National parks and forest reserves, originally established under fortress conservation doctrines, now overlap with corridors affected by banditry, kidnapping networks, informal gold rushes, and wildlife trafficking. This policy release advances a reform proposition: *that selected protected landscapes characterized by high geological endowment and security exposure should transition into productive geoheritage territories under the UNESCO Global Geopark framework or hybrid conservation models*.

The central thesis is straightforward:

In fragile environments, economically sterile conservation estates risk becoming under-governed spaces. Productive, community-anchored conservation landscapes may instead function as stabilization buffers—enhancing surveillance density, formalizing extractive economies, and generating employment.

This paper is issued as part of The Royal Institute's new drive to convene strategic conversations at the intersection of natural capital governance, national security, and institutional reform.

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Conservation and Fragility: A Strategic Blind Spot

Fortress conservation models were designed on the assumption that ecological protection required territorial exclusion (Brockington, 2002). While defensible in stable governance environments, such models encounter structural limitations where state enforcement capacity is thin and livelihood pressures are acute.

Security ecology literature demonstrates that terrain advantages—dense forests, mountainous corridors, low settlement density—can create concealment benefits for non-state armed actors (Homer-Dixon, 1999; UNEP, 2009). In Nigeria's northwestern and middle-belt regions, forest corridors contiguous with protected landscapes have been referenced in open-source security reporting as operational spaces for bandit encampments and ransom logistics (International Crisis Group, 2020).

Simultaneously, artisanal and small-scale mining (ASM) expansion across mineralized schist belts has intersected conservation territories. Prohibition has not eliminated extraction pressures; instead, it has driven activity underground, often accompanied by armed protection networks (Hilson, 2016). The convergence of insecurity, illegal mining, and conservation zoning exposes a strategic blind spot: *conservation policy has not been sufficiently integrated into national security architecture.*

The Economic Sterilization Problem of National Parks and Its Security Implications

National Parks prohibit widespread settlement, mining, and most forms of economic activity. While ecologically rational, this approach can produce economic sterilization of land. In mineralized terrains, prohibition creates contradictions. Geological endowment—gold, gemstones, rare metals—exists beneath conservation boundaries. Surrounding communities face unemployment pressures. Informal extraction becomes attractive.

Where communities perceive conservation territories as economically exclusionary, local cooperation in surveillance diminishes. The result is a governance gap that may be exploited by armed actors. From a national security perspective, territorially empty but mineral-rich landscapes in fragile regions present structural vulnerabilities. *It is a considered institutional view that conservation estates in fragile environments cannot remain economically inert if they are to remain secure.*

Geoheritage as a Stabilization Instrument

The UNESCO Global Geopark framework offers a governance innovation. Geoparks are territorially unified areas where geological heritage of international significance is protected through integrated conservation, education, and sustainable development (UNESCO, 2016).

Unlike fortress National Parks, Geoparks embed resident communities within management systems. They permit regulated economic activity within zoned frameworks while protecting core heritage assets. Geoheritage becomes the anchor for: Tourism ecosystems, research and education platforms, cultural enterprise clusters and regulated artisanal mining within defined zones.

This participatory architecture transforms conservation landscapes from exclusion zones into livelihood systems. China's geopark network demonstrates large-scale rural transformation anchored on geological heritage. Morocco's M'Goun Geopark illustrates community-integrated fossil tourism and craft industries. Hybrid African conservation models show coexistence between tourism, heritage, and resident populations. *Thus, Nigeria's geological diversity—ring complexes, inselbergs, basement outcrops, sedimentary escarpments—provides a credible scientific basis for selective reclassification.*

Surveillance Density and Territorial Governance

National security strategies often prioritize force projection, patrol logistics, and intelligence capability. Yet territorial control is not determined by force presence alone. It is also shaped by what may be termed surveillance density—the concentration of legitimate human activity capable of generating visibility, information flows, and early warning signals within a defined geographic space.

In large conservation territories where settlement is prohibited and economic activity is suspended; surveillance density is inherently low. Ranger units, frequently under-resourced relative to landmass size, become the sole formal monitoring presence. Where these territories span hundreds or thousands of square kilometres, enforcement becomes reactive rather than preventative. Terrain advantages—dense forest cover, rugged escarpments, mountainous corridors—compound the challenge. Under such conditions, concealment is structurally easier than detection.

Security ecology research demonstrates that environments characterized by low civilian presence and limited economic circulation create favorable operating conditions for non-state armed actors (Homer-Dixon, 1999; UNEP, 2009). In parts of Nigeria's northwestern forest belts and middle-belt reserves, this structural vulnerability has been observed where armed groups exploit remoteness and limited patrol frequency. Even where parks are not the origin of insecurity, their terrain can be appropriated as logistical depth.

By contrast, productive landscapes exhibit higher levels of legitimate human circulation. Tourism operations, research expeditions, regulated artisanal mining clusters, hospitality enterprises, and resident communities generate constant movement and informal observation. Information flows multiply. Suspicious activity is more likely to be noticed and reported. Economic stakeholders become invested in territorial stability because their livelihoods depend upon it.

The geopark model increases this legitimate density without abandoning conservation. Core heritage zones remain protected, but surrounding enterprise and education zones activate the landscape. Surveillance thus becomes layered: formal security actors, park management authorities, community cooperatives, tourism operators, and licensed extractive groups all contribute to situational awareness.

From a national security perspective, this creates a multiplier effect. Rather than relying solely on ranger patrols or episodic military operations, the landscape itself becomes socially embedded within governance networks. Concealment costs for armed actors rise. Logistical movement becomes more detectable. The probability of early warning increases.

It is important to emphasize that increased economic presence does not automatically eliminate insecurity. However, territorially empty spaces in fragile environments have repeatedly demonstrated higher vulnerability to illicit occupation.

Productive geoheritage landscapes, when properly zoned and regulated, shift the territorial equilibrium from concealment advantage to observation advantage. *In this sense, geopark conversion should not be viewed primarily as a tourism reform. It is, strategically, an adjustment in territorial governance architecture—transforming low-density conservation estates into monitored, economically anchored landscapes integrated into national security systems.*

Natural Capital Transformation and Development Finance

Protected areas are typically treated as ecological assets rather than economic instruments. In fragile mineral economies, this distinction is increasingly artificial. Natural capital—comprising geological endowment, mineralization, landscape aesthetics, biodiversity, and hydrological systems—represents latent economic value. The policy question is not whether to preserve it, but how to structure its preservation in a way that reinforces fiscal sustainability and territorial stability.

Under fortress conservation models, much of this natural capital remains financially dormant. Revenue streams are limited largely to subventions and, in rare cases, modest tourism receipts. Where visitor infrastructure is weak and settlement prohibited, protected areas become fiscally dependent administrative units rather than self-reinforcing development ecosystems. This dependence places conservation at the mercy of fluctuating public budgets and weakens long-term resilience. By contrast, the geopark model treats geological heritage as an anchor asset capable of catalyzing diversified revenue generation. Geotourism circuits, research partnerships, academic field schools, heritage branding, and regulated artisanal mining clusters can be structured to produce steady income streams while preserving core zones.

Importantly, revenue pluralization distributes risk. Tourism receipts, concession licensing, educational programming, and mineral royalties create layered financing architecture rather than a single funding source.

For the African Development Bank, this transformation aligns with broader efforts to integrate natural capital accounting into macroeconomic planning. When geological landscapes are valued not only for preservation but for structured productivity, they become investable territories. Infrastructure investment—roads, visitor facilities, digital connectivity, environmental monitoring systems—can be justified not merely as conservation expenditure but as green growth capital.

Formalizing artisanal mining within zoned geopark territories is particularly significant. ASM remains one of the largest informal employment sectors in Sub-Saharan Africa (Hilson, 2016). When left informal, it generates environmental damage, revenue leakage, and conflict risk. When regulated within clear environmental and spatial parameters, it can provide traceable supply chains, improved safety standards, and royalty capture for local development.

It is a considered view that natural capital in fragile mineral economies must move from static protection toward structured productivity. conservation financing, youth employment, and rather than held in economic suspension.

Spatial Convergence: Security, Mineralization, and Protected Area Boundaries

Understanding the reform imperative requires spatial clarity. Nigeria's geological architecture includes extensive schist belts, basement complexes, and ring structures associated with gold, gemstones, tin, columbite, and rare metals. Many of these formations extend into our border conservation territories established for ecological or scenic value.

Simultaneously, open-source security reporting over the past decade has mapped banditry concentrations across forest corridors in northwestern and north-central Nigeria. While insecurity drivers are multifaceted—ranging from rural poverty to arms proliferation—the spatial overlap between forested terrain, mineralization zones, and weakly policed conservation areas is analytically significant. Preliminary geospatial review suggests that certain protected landscapes lie within broader mineral–insecurity corridors. In these zones, three variables intersect: ***high geological endowment, low surveillance density, and rural unemployment pressures***. This convergence does not imply causation, but it signals structural vulnerability.

A rigorous spatial assessment would require integration of multiple datasets: protected area shapefiles, geological survey maps, artisanal mining site coordinates, settlement density grids, and recorded security incident locations. Overlay analysis would enable classification of protected territories into risk tiers based on mineral overlap and insecurity exposure. Such mapping is not merely academic. It would allow policymakers to identify where fortress conservation remains viable and where hybrid geopark conversion may enhance territorial governance.

It would also enable targeted infrastructure investment—roads, monitoring stations, ranger outposts, digital surveillance nodes—in zones where concealment advantage currently exceeds observation capacity.

From a national security standpoint, spatial convergence analysis transforms conservation reform from ideological debate into evidence-based territorial planning.

From a development finance standpoint, it provides the empirical basis for prioritizing pilot landscapes with the highest stabilization and green growth returns.

Illustrative Cases of Emerging Pressures in Nigerian Protected Areas

Across Nigeria, several designated conservation territories are experiencing mounting governance pressures that illustrate the broader structural argument advanced in this brief. **The Gashaka-Gumti National Park,** Nigeria's largest national park, situated along the Cameroon border and underlain in parts by mineralized basement formations, has faced recurring concerns regarding illegal artisanal mining activities in peripheral and buffer zones, alongside poaching and cross-border movement challenges. Its rugged topography and limited patrol density complicate enforcement across vast terrain.

Similarly, the **Kainji Lake National Park—particularly the Borgu sector extending into Niger State**—has been affected by pressures associated with banditry within surrounding forest corridors, illegal logging, grazing incursions, and informal extractive activities in adjoining areas.

While these parks were established for biodiversity protection and watershed conservation, their geographic location within broader insecurity and mineralization belts underscores the need to reassess how conservation landscapes are governed when ecological value intersects with livelihood pressures and fragile security environments.

Strategic Pathways for Reform: Integrating Security Architecture and Development Finance

The reform proposition advanced in this brief requires coordination across institutions that do not traditionally operate in shared frameworks. Conservation agencies, mining regulators, security institutions, and development finance actors frequently work in parallel rather than in convergence. Yet the spatial overlap of mineralization, insecurity, and protected territories makes such separation increasingly untenable.

For national security leadership, the first adjustment required is conceptual rather than operational. Conservation landscapes should be incorporated into national security mapping and early-warning systems not merely as ecological zones but as territorial variables. Protected areas located within mineralized and insecurity-exposed corridors should be assessed for surveillance density, settlement exclusion impacts, and economic dormancy risks. This does not imply militarization of parks, but it does require recognizing that territorial emptiness in fragile contexts can generate structural vulnerabilities. A joint security–natural capital spatial assessment would allow classification of protected areas by stabilization risk and reform suitability.

For the African Development Bank and other development partners, the opportunity lies in demonstrating how conservation modernization can serve as a green growth instrument in fragile states. Rather than financing protected areas solely through biodiversity or climate portfolios, AfDB could support integrated pilot conversions in landscapes where mineral belts intersect insecurity exposure.

Such support would not merely fund tourism infrastructure but would incorporate GIS-based risk modeling, artisanal mining formalization frameworks, enterprise incubation for local communities, and natural capital valuation mechanisms. In doing so, conservation reform becomes part of a broader fragility mitigation and employment generation strategy.

A pilot landscape approach is advisable. Selecting one geologically dominant, security-exposed protected territory for structured hybrid conversion would allow empirical testing of the geopark stabilization thesis. The pilot would integrate environmental safeguards, formalized artisanal mining clusters within defined zones, tourism infrastructure scaled to carrying capacity, and community equity participation structures.

Monitoring metrics would include changes in incident frequency, employment levels, revenue capture, and compliance with environmental standards. If measurable stabilization dividends emerge, the model could then be replicated across similar mineralized conservation territories in other African contexts. This reform pathway should not be misconstrued as deregulation. Biodiversity-rich core zones must remain inviolable. What changes is not the commitment to conservation, but the governance architecture surrounding it. ***Hybridization—rather than abolition***—offers a more credible route forward.

Within this evolving policy space, the role of neutral convening platforms becomes significant. Institutional reform that bridges conservation, mining governance, and security strategy requires neutral forums capable of facilitating technical dialogue across sectors.

The Royal Institute's contribution is not programmatic implementation, but structured policy analysis and multi-sectoral convening. By situating conservation modernization within broader leadership and institutional strategy conversations, the Institute seeks to provide analytical scaffolding for decisions that ultimately reside with state and development finance actors.

This policy brief should therefore be read not as advocacy for a single institutional model, but as a technical intervention in an emerging debate: how fragile mineral economies can align natural capital governance with territorial stabilization and green growth objectives. The convergence of insecurity, informal mining, and conservation zoning makes that debate urgent. The question is no longer whether protected areas should be preserved. It is how they should be governed when geography, geology, and fragility intersect.

Declaration:

The views expressed herein are those of the corresponding author and The Royal Institute (TRI). They do not represent the official position of UNESCO.

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