

The Mafia's Republic and Criminal Ecosystems in Africa's Mining Industry: Implications for Governance and Development

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ABSTRACT

Africa's mining sector has become an arena in which criminal enterprise and formal statehood are no longer easily distinguishable. This article develops the concept of the “Mafia's Republic” to describe political orders in which state institutions, security services, transnational trading networks, and armed non-state actors co-govern extractive value chains for private and factional gain. Drawing on a comparative synthesis of evidence from the Democratic Republic of Congo, Ghana, South Africa, Nigeria, Zimbabwe, and the Sahel, the article maps the layered architecture of criminal ecosystems in mining, from artisanal extraction through smuggling, trade-based laundering, and global markets. It argues that these ecosystems are not aberrations from weak governance but are, in many cases, functional systems of rule that redistribute mineral rents along political and coercive hierarchies. The article assesses the implications of this criminalized governance for state legitimacy, fiscal capacity, environmental and human security, and inclusive development, before proposing a multi-level policy framework combining supply-chain due diligence, beneficial-ownership transparency, security-sector reform, and regional harmonization of mineral-trade governance. The analysis contributes to debates on hybrid governance and the political economy of extraction by showing how criminality can become constitutive of, rather than external to, state authority.

Keywords: Mafia state; criminal ecosystems; artisanal mining; illicit financial flows; resource governance; state capture; Africa; development.

1. Introduction

Africa holds an outsized share of the world's reserves of cobalt, coltan, gold, diamonds, and platinum-group metals, resources that are simultaneously central to national development strategies and to the global energy transition. Yet across many of the continent's most resource-rich territories, the institutions that are formally responsible for regulating extraction — mining ministries, customs services, central banks, and security agencies — are also active participants in the diversion of mineral wealth. This article asks a deceptively simple question: what happens to governance and development when the criminal exploitation of minerals is not an exception to state authority but one of its organizing principles?

We term this configuration the “Mafia's Republic”: a political order in which state sovereignty is exercised in part through the management, licensing, and protection of criminal rent extraction, rather than in spite of it. The term deliberately echoes the broader literature on “mafia states” and “privatised violence” in transition and post-conflict economies, while adapting it to the specific institutional and historical conditions of African mineral economies — colonial-era extraction infrastructures, post-independence patrimonialism, structural adjustment-era deregulation, and contemporary artisanal mining booms. Criminal ecosystems, in this framing, are not simply networks of smugglers operating at the margins of the state; they are vertically integrated systems that bind together political elites, security forces, transnational trading houses, local militias, and artisanal workers into a single, if unequal, extractive hierarchy. Within this republic, an atmosphere of rules breaking becomes a common phenomenon. In fact, being law abiding is a serious crime itself, because playing to the tune of the law means destroying the criminal structure built by the informal institution.

The stakes of understanding this phenomenon are considerable. Illicit financial flows linked to the exploitation of natural resources are consistently identified by pan-African and multilateral bodies as one of the largest sources of revenue loss on the continent, undermining domestic resource mobilization at precisely the moment when financing needs for infrastructure, health, and education are most acute. Beyond the fiscal dimension, criminalized mining ecosystems have been directly implicated in the financing of armed conflict, the entrenchment of authoritarian and neopatrimonial rule, environmental degradation, and severe labour and human rights abuses, including child labour and debt bondage in artisanal sites.

This article proceeds in nine further sections. Section 2 reviews the theoretical literature on state capture, violent entrepreneurship, and the resource curse that informs our framework. Section 3 develops the Mafia's Republic model and situates it within a broader typology of criminal ecosystems. Section 4 outlines the comparative case-study methodology. Section 5 presents five regional cases

spanning Central, West, Southern, and Sahelian Africa. Section 6 analyses the actors and network structures that constitute these ecosystems. Sections 7 and 8 examine, respectively, the governance and development implications of criminalized mining. Section 9 proposes a policy framework, and Section 10 concludes.

2. Literature Review and Theoretical Framework

2.1 State Capture and Criminalized Statehood

A substantial body of scholarship has documented how, in weakly institutionalized settings, formal state structures become vehicles for private accumulation by ruling elites rather than instruments of public administration. Studies of the “criminalization of the state” in Africa have shown how informal, extra-legal, and even violent practices are woven into the ordinary functioning of governments, producing what has been described as a form of governance through disorder rather than despite it (Dickie, 2013; Jimmy & Osogi, 2024, Jimmy 2025). This literature cautions against treating corruption and criminality in African states as symptoms of institutional failure alone; in many contexts they constitute an alternative, functioning logic of rule, in which access to rents — including mineral rents — is the principal currency of political survival.

Parallel work on “warlord politics” has examined how some African rulers deliberately weakened formal bureaucracies and instead governed through personalized commercial networks, licensing armed proxies and private commercial partners to manage the extraction and sale of resources such as diamonds and timber. This body of work is foundational to the Mafia's Republic concept because it demonstrates that the outsourcing of extraction governance to informal and coercive actors can be a rational elite strategy for consolidating power under conditions of fiscal and institutional weakness, rather than simply a governance failure to be corrected.

2.2 Violent Entrepreneurs and Protection Markets

Research on organized crime in post-Soviet economies introduced the concept of the “violent entrepreneur”: an actor who supplies protection, dispute resolution, and market access using the threat or use of force, effectively substituting for the state's monopoly on legitimate coercion. Applied to African mining contexts, this lens helps explain the proliferation of armed groups, militia “tax” regimes, and private security arrangements that structure access to artisanal and small-scale mining sites. Where formal property rights over mineral deposits are contested, unclear, or unenforced, protection markets emerge to fill the resulting governance vacuum — but these markets are rarely neutral; they typically reproduce or reinforce existing asymmetries of political and coercive power.

2.3 The Resource Curse Revisited

Classical resource curse theory linked dependence on point-source resource rents to slower growth, weaker institutions, and heightened conflict risk, largely through channels such as Dutch disease, rent-

seeking, and reduced government accountability. More recent work has refined this thesis by emphasizing that the curse is not a deterministic outcome of resource endowments but is mediated by pre-existing institutional quality, the geographic and technical characteristics of extraction (lootable versus non-lootable resources), and the structure of global demand and trading networks. Artisanal and small-scale mining of high-value, easily transportable minerals — gold, diamonds, coltan, cobalt — is particularly “lootable” in this sense, making it disproportionately vulnerable to capture by criminal and armed actors relative to capital-intensive industrial mining (Jimmy et al, 2025, Jimmy 2025,2026).

Synthesizing these three strands, we conceptualize criminal ecosystems in African mining not as isolated illicit markets operating outside the state, but as institutionalized arrangements that bind together political authority, coercive capacity, and commercial networks around the control of lootable mineral rents — the defining feature of what we term the Mafia's Republic.

2.4. Conceptual Framework: The Mafia's Republic Model

We define a Mafia's Republic as a political order in which (i) the licensing, taxation, and protection of mineral extraction is substantially controlled by networks that blend formal state authority with organized criminal practice; (ii) coercive actors — whether uniformed security services, allied militias, or private armed groups — provide protection and enforcement services in exchange for a share of mineral rents; and (iii) the resulting rent flows are distributed along a hierarchy that extends from local extraction sites to national political elites and onward into transnational trading and financial networks. Crucially, the model treats criminality and statehood as mutually constitutive rather than opposed: the state's authority to grant or withhold access to lucrative deposits is precisely what makes criminal capture of the licensing and enforcement apparatus so valuable.

Figure 1 depicts this architecture as a five-layer hierarchy. At the apex, political-bureaucratic elites control the legal instruments of statehood — mining licences, export permits, customs codes — which they can allocate selectively to allied commercial and criminal partners. The security and enforcement apparatus provides the coercive guarantee that sustains this allocation, including protection from rival claimants and suppression of dissent. Transnational criminal networks and trading brokers supply the logistical and financial infrastructure needed to move minerals across borders and launder the proceeds through legitimate-seeming trade. Local intermediaries and armed groups manage day-to-day control over extraction sites, often through a combination of coercion and patronage. At the base, the artisanal and informal extraction workforce performs the labour that generates the underlying value, typically capturing the smallest share of total rents while bearing the greatest physical and legal risk.

Figure 1. The “Mafia's Republic” Layered Governance Schema

Vertical integration of state authority and criminal enterprise in mining rent extraction

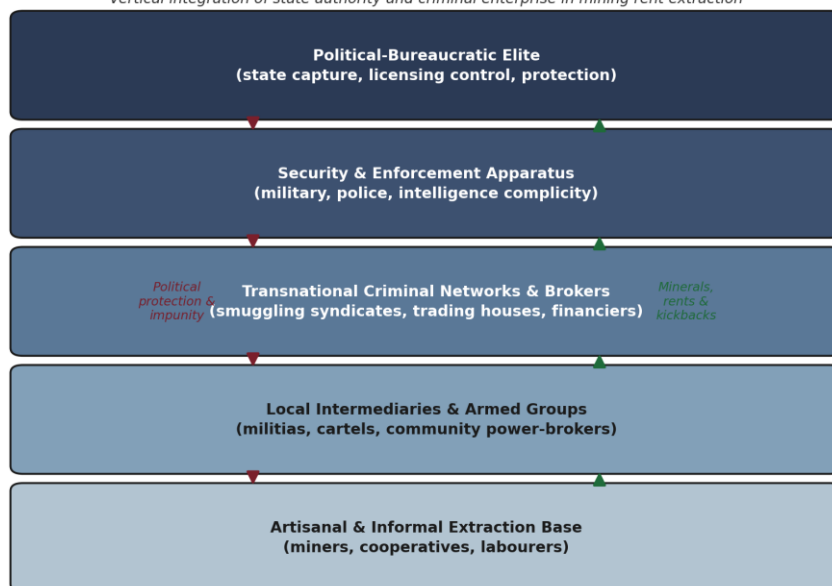


Figure 1. The Mafia's Republic layered governance schema, showing reciprocal flows of political protection and mineral rents across five institutional layers.

Table 1 elaborates a typology distinguishing four broad categories of criminal ecosystem observed across African mining contexts, differentiated by the primary locus of control and the dominant enforcement mechanism. These categories are not mutually exclusive; several may coexist within a single mineral value chain, and cases frequently migrate between types as conflict dynamics, commodity prices, and regulatory interventions change.

Type	Primary locus of control	Dominant enforcement mechanism	Illustrative context
Elite-captured licensing regime	National ministries, state mining companies, presidential networks	Administrative discretion; selective legality	Zimbabwe (Marange diamonds); Angola (historical)
Militarized taxation system	Armed groups, factions of national armies	Direct coercion; roadblocks and site “taxes”	Eastern DRC (coltan, gold, cassiterite)
Syndicate-embedded artisanal economy	Transnational trading syndicates partnered with local financiers	Debt bondage; equipment and credit control	Ghana, Nigeria (galamsey-linked gold)
Conflict-financing extraction network	Non-state armed/extremist groups	Territorial control; ideological coercion	Mali, Burkina Faso (artisanal gold)

Table 1. A typology of criminal ecosystems in African mining, by locus of control and enforcement mechanism.

3. Methodology

This article adopts a comparative qualitative case-study design, synthesizing secondary evidence from peer-reviewed political economy and criminology literature, reporting by specialized monitoring bodies (including United Nations Group of Experts reports, the Extractive Industries Transparency Initiative, and civil-society organizations tracking illicit mineral trade), and publicly available governance and development indicators. Six cases were purposively selected to maximize variation across mineral type (diamonds, gold, coltan/cobalt), conflict status (active conflict, post-conflict, and non-conflict settings), and dominant ecosystem type identified in Table 1. Case evidence was organized according to a common analytical template covering: (a) the mineral and production system; (b) the principal criminal and state actors involved; (c) the enforcement and protection mechanisms sustaining the ecosystem; and (d) documented governance and development consequences. Because much of the underlying evidence originates from investigative and monitoring sources rather than randomized data collection, quantitative estimates presented below (for example, of illicit flows or informal employment) should be read as indicative orders of magnitude drawn from the cited literature rather than precise measurements, and are presented as ranges where the underlying sources diverge.

A limitation of this design is that it relies substantially on documentary and monitoring evidence that is itself shaped by the access constraints and reporting incentives of the organizations producing it; investigative and advocacy sources may, for instance, be more likely to document cases with clear conflict linkages than more diffuse forms of elite capture that leave fewer traces in the public record. The comparative framework developed below should therefore be read as a synthesis of the best available evidence and an analytical heuristic for organizing further research, rather than as a definitive causal account of any single case.

4. Results and Findings

4.1 Democratic Republic of Congo — Coltan, Cobalt, and Armed Group Taxation

Eastern DRC's mineral economy, encompassing coltan, cassiterite, gold, and increasingly cobalt, has long been characterized by the coexistence of formal state mining administration with parallel taxation systems operated by non-state armed groups and factions within the national army. Control over mining sites and transport corridors has been a recurrent objective of armed factions, who levy informal taxes at extraction sites and checkpoints, generating revenue streams that have historically helped sustain military campaigns. Formal due-diligence and traceability schemes introduced over the past decade have reduced, but not eliminated, the role of conflict financing in some mineral supply chains, and cobalt — central to global battery production — has emerged as a new focal point of concern regarding informal labour conditions and opaque trading intermediaries.

4.2 Ghana — Galamsey and Transnational Syndicates

Ghana's illegal small-scale gold mining sector, known locally as galamsey, has expanded significantly over the past two decades, drawing in both Ghanaian operators and foreign — notably Chinese — investors who supply capital, heavy machinery, and access to buyers. Local chiefs, land custodians, and, in numerous documented cases, security and political officials have been implicated in facilitating illegal concessions in exchange for payments, blurring the line between customary land governance, state regulation, and organized illegality. The resulting ecosystem has produced severe river and forest degradation alongside significant informal employment, illustrating the tension between the livelihood function of criminalized mining and its environmental and governance costs.

4.3 South Africa — Zama Zama Networks and Abandoned Mine Economies

South Africa's decline in formal deep-level gold mining has left thousands of disused shafts that are now worked informally by so-called zama zama miners, many organized into hierarchical syndicates with links to cross-border smuggling networks and, in some documented instances, corrupt elements within local policing structures. Violent competition between rival syndicates for control of productive shafts has produced significant loss of life, while gold extracted informally is frequently laundered through legitimate refining and export channels, illustrating how criminal ecosystems can penetrate ostensibly formal segments of a mineral value chain.

4.4 Zimbabwe — Marange Diamonds and Elite Capture

The discovery of alluvial diamonds at Marange in the mid-2000s triggered a rush that was subsequently brought under the control of state security services and politically connected commercial partners following a violent clearance of independent artisanal miners. Subsequent governance of the field has been characterized by limited fiscal transparency, allegations of revenue diversion, and the concentration of extraction rights among entities linked to the security establishment, providing a paradigmatic example of the elite-captured licensing regime identified in Table 1.

4.5 The Sahel — Artisanal Gold and Conflict Financing

In Mali, Burkina Faso, and neighbouring areas of the Sahel, the rapid expansion of artisanal gold mining has coincided with the spread of jihadist and other non-state armed groups, several of which have been documented taxing, and in some cases directly operating, gold sites and transport routes as a source of financing. The lootable, high-value, and easily concealed nature of gold, combined with weak state presence across large rural territories, has made artisanal gold mining a particularly attractive revenue source for conflict actors, linking mineral governance failures directly to regional security crises.

4.6 Northern Nigeria — Banditry and Niger Delta Militant Networks

Nigeria illustrates the mafia-mining-terrorism nexus in two distinct but structurally related theatres. In the north-west, armed "bandit" syndicates in Zamfara, Katsina, and neighbouring states have moved from guarding elite-owned gold claims to operating as autonomous predatory forces, using proceeds from illegal gold mining to procure arms, expand recruitment, and sustain a wider ecosystem of kidnapping and rural violence that Nigeria's counter-terrorism authorities describe as intersecting directly with insurgency and cross-border smuggling networks (Gulf Times, 2026; TRT Afrika, 2025; The Conversation, 2025). In the south, a parallel but older dynamic has unfolded in the Niger Delta, where decades of oil theft, locally termed "bunkering," have financed successive waves of militancy, from the Movement for the Emancipation of the Niger Delta (MEND) to more recent creek-based armed groups, who tap pipelines, operate illegal refineries, and sell stolen crude to fund weapons and fighter recruitment. Regional officials have explicitly linked this financing model to the growth of youth cult groups in the Delta, with proceeds from oil theft reported to sustain "large numbers of youths" organised into cult formations that provide both labour and armed protection for bunkering operations.

4.7 Cross-Case Synthesis

Read together, the six cases suggest that the specific form a criminal mining ecosystem takes is shaped less by the type of mineral involved than by the prior configuration of state and coercive authority in the territory where extraction occurs. Where a national security establishment retains a coherent chain of command, as in Zimbabwe, criminal capture tends to concentrate at the apex of the hierarchy through licensing and equity arrangements, producing an elite-captured regime with comparatively low levels of overt violence at extraction sites themselves. Where state authority is territorially fragmented, as in eastern DR Congo or the central Sahel, control migrates downward to armed factions who tax production directly, producing militarized or conflict-financing systems characterized by higher levels of violence but often lower absolute rent capture per unit of mineral extracted, since transport and protection costs consume a larger share of value. Syndicate-embedded systems, observed in Ghana and South Africa, occupy an intermediate position: state authority remains formally intact and nominally in control of licensing, but enforcement is selectively suspended in exchange for payments to local officials and traditional authorities, allowing transnational commercial syndicates to operate with functional impunity without the need for direct territorial conquest.

This comparison also indicates that ecosystem type is not fixed. Falling global commodity prices, the deployment of new security forces, or the conclusion of a peace agreement can shift a given site from one category to another — for example, from a militarized taxation system toward a syndicate-

embedded artisanal economy as armed actors demobilize but informal financiers and buyers remain in place. This fluidity has direct implications for policy design, discussed further in Section 9, since interventions calibrated to one ecosystem type may prove ineffective, or even counterproductive, once conditions shift a site toward a different configuration.

Table 2 summarizes the five cases along a common set of comparative dimensions.

Country / region	Key mineral(s)	Dominant ecosystem type	Principal actors	Primary governance consequence
DR Congo (east)	Coltan, cassiterite, cobalt, gold	Militarized taxation system	Armed factions, army units, trading houses	Conflict financing; weak traceability
Ghana	Gold	Syndicate-embedded artisanal economy	Foreign investors, local financiers, chiefs, officials	Environmental degradation; land governance erosion
South Africa	Gold (informal, abandoned shafts)	Syndicate-embedded artisanal economy	Zama zama syndicates, cross-border networks	Violence; leakage from formal refining chains
Zimbabwe	Diamonds	Elite-captured licensing regime	Security services, politically linked firms	Fiscal opacity; revenue diversion
Mali / Burkina Faso	Gold	Conflict-financing extraction network	Non-state armed groups, local intermediaries	Financing of insurgency; territorial fragmentation

Table 2. Comparative summary of criminal mining ecosystems across five African cases.

Table 2a situates these cases within an approximate sense of scale, drawing on ranges reported in the monitoring and research literature cited throughout this article. These figures should be treated as illustrative orders of magnitude rather than precise measurements, given the inherent difficulty of quantifying informal and illicit economic activity; they are nonetheless useful for indicating the comparative weight of the phenomenon across cases.

Country / region	Estimated informal mining workforce	Reported scale of illicit flows / diversion
DR Congo (east)	Several hundred thousand artisanal miners	Substantial share of coltan/gold output smuggled via neighbouring states
Ghana	Estimated in the low millions (direct and indirect galamsey livelihoods)	Significant unlicensed gold output; major river-system contamination

South Africa	Tens of thousands of zama zama miners	Meaningful share of informal gold laundered through legal export channels
Zimbabwe	Tens of thousands at peak of Marange rush	Large share of diamond revenue reported unaccounted for in national accounts
Mali / Burkina Faso	Hundreds of thousands across artisanal gold sites	Gold taxation recognized as a material revenue source for armed groups

Table 2a. Approximate scale indicators for informal employment and illicit diversion by case (illustrative ranges synthesized from cited monitoring and research literature).

4.7. Criminal Ecosystem Actors and Networks

Across the cases reviewed above, a recurring set of actor categories can be identified, each performing a distinct function within the broader value chain depicted in Figure 2. Table 3 sets out this actor typology alongside the primary function each actor performs and the form of value or protection it extracts in return.

Actor category	Primary function in ecosystem	Value or protection extracted
Political-bureaucratic elites	Allocate licences, permits, and export authorizations	Equity stakes, bribes, political financing
Security and intelligence services	Provide protection, suppress rivals and dissent	Site “taxes”, cargo escort fees, promotions/patronage
Armed groups / militias	Control territory and extraction sites	Direct taxation of output; forced labour arrangements
Trading houses and financiers	Aggregate, transport, and pre-finance production	Below-market purchase prices; debt-bondage margins
Customs and border officials	Facilitate cross-border movement of undeclared minerals	Per-shipment bribes; smuggling commissions
Artisanal miners and cooperatives	Perform extraction labour	Subsistence wages; frequently indebted to financiers

Table 3. Typology of actors in African mining criminal ecosystems and their respective functions. Figure 2 traces how mineral value moves through this network, from extraction through aggregation, cross-border smuggling, and trade-based laundering, before reaching global markets. At each stage, governance leakage occurs — through unregistered output, under-invoicing, customs fraud, or opaque trading structures — and a portion of the resulting proceeds is recycled back into the ecosystem to sustain the coercive and political infrastructure on which it depends, producing a self-reinforcing cycle rather than a one-off loss of revenue.

Figure 2. The Criminal Ecosystem Value Chain in African Mineral Extraction

From unlicensed extraction to global markets, with governance leakage points and feedback loop

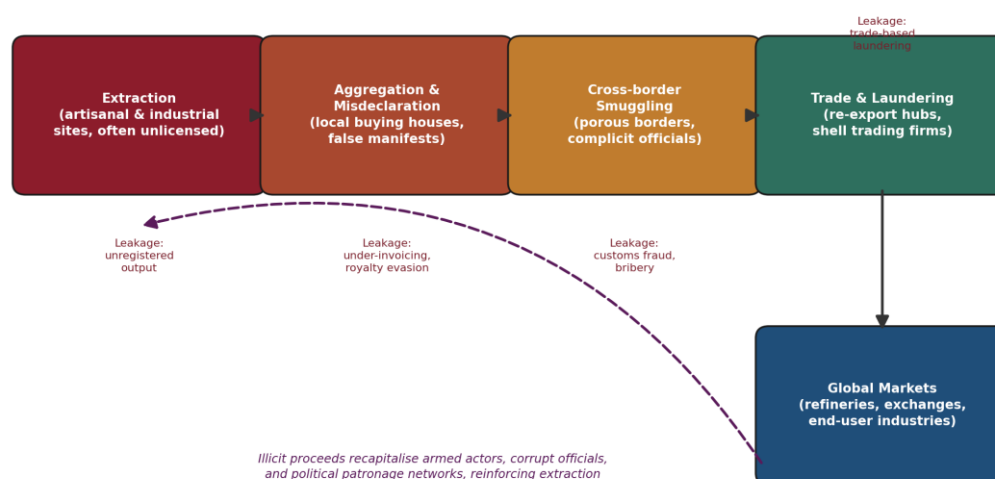


Figure 2. The criminal ecosystem value chain in African mineral extraction, showing governance leakage points and the feedback loop that recapitalizes armed and political actors.

4.8. Governance Implications

The Mafia's Republic model carries several distinct implications for governance that extend beyond conventional accounts of corruption. First, it implies a fundamental erosion of the state's claimed monopoly on legitimate coercion, since enforcement over valuable territory is effectively contracted out to, or shared with, armed non-state actors and informal syndicates. Second, it produces a form of fiscal statehood in which formal budgetary institutions capture only a fraction of the resource rent actually generated, while a parallel, off-budget system of rent distribution sustains political patronage networks that are largely insulated from public accountability mechanisms such as legislative oversight or audit. Third, because criminal ecosystems typically depend on the selective, rather than universal, application of law, they tend to entrench legal dualism: formal regulations remain on the books but are enforced unevenly, in ways that reflect political alignment rather than the substance of the law itself.

Table 4 summarizes these governance implications across four institutional domains, drawing on the case evidence presented above.

Governance domain	Observed effect of criminal mining ecosystems	Illustrative case reference
Rule of law	Selective enforcement; legal dualism between formal statute and practice	Ghana; South Africa
Public finance	Under-collection of royalties and export duties; off-budget rent flows	Zimbabwe; DR Congo
Security sector	Blurring of policing/military roles with commercial protection functions	South Africa; DR Congo

Territorial authority	Fragmentation of sovereignty; parallel taxation by non-state actors	DR Congo; Mali/Burkina Faso
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Table 4. Governance implications of criminal mining ecosystems across four institutional domains.

A further implication concerns legitimacy. Where citizens observe that mineral wealth extracted from their communities is systematically diverted through criminalized channels while public services remain underfunded, the resulting perception of state predation can corrode diffuse political trust, feeding into broader cycles of instability, protest, and, in extreme cases, support for insurgent or secessionist movements that promise an alternative distribution of resource control.

These dynamics also complicate conventional governance-reform strategies premised on strengthening state capacity in a generic sense. Where the state's own institutions are structurally implicated in criminal rent capture, capacity-building interventions that simply add technical resources or training to existing agencies — without addressing the incentive structures that reward diversion over enforcement — risk being absorbed into the very networks they were intended to constrain. This suggests that governance reform in Mafia's Republic settings must pair technical assistance with mechanisms that alter the underlying political incentives of elite and security actors, such as external monitoring, conditional financing, and support for domestic accountability constituencies including parliaments, media, and civil-society coalitions with a direct stake in resource transparency.

4.9 Development Implications

The development consequences of criminalized mining ecosystems operate through several interlocking channels. At the macro level, the diversion of mineral rents away from formal fiscal systems constrains the resources available for public investment in infrastructure, health, and education, reinforcing the resource curse dynamics discussed in Section 2. At the meso level, criminal control of extraction sites frequently displaces or crowds out efforts to formalize and support artisanal mining livelihoods through cooperative structures, fair-pricing mechanisms, and improved safety standards, leaving millions of informal miners across the continent exposed to hazardous working conditions, debt bondage, and limited bargaining power vis-à-vis financiers and buyers.

Environmental costs are similarly significant: criminal ecosystems typically operate outside environmental permitting and monitoring regimes, contributing to mercury and cyanide contamination of waterways, deforestation, and land degradation that can undermine agricultural livelihoods well beyond the immediate mining footprint, as documented extensively in the Ghanaian galamsey case. Gender and child-protection dimensions also warrant emphasis: informal and criminalized mining sites are frequently associated with elevated risks of child labour, exposure to

violence, and limited access to basic services for mining-affected communities, particularly women engaged in ancillary economic activities around extraction sites.

At the same time, a purely punitive development response risks overlooking the genuine livelihood function that artisanal and informally organized mining performs for millions of households in the absence of viable economic alternatives. Development strategies that treat criminalized mining solely as a law-enforcement problem, without addressing the underlying poverty, land-tenure insecurity, and lack of formal-sector opportunity that drive participation in these ecosystems, are unlikely to achieve durable change and may simply displace criminal control to new sites or commodities.

5. Conclusion and Policy Recommendations

This article has argued that criminal ecosystems in Africa's mining industry are best understood not as deviations from otherwise functional state governance, but as expressions of an alternative, if informal, mode of statehood — the Mafia's Republic — in which political authority, coercive capacity, and criminal commerce are tightly interwoven around the control of lootable mineral rents. The comparative evidence from the Democratic Republic of Congo, Ghana, South Africa, Zimbabwe, and the Sahel demonstrates both the diversity of forms this phenomenon can take and the common structural logic that underlies it: a layered hierarchy through which mineral value and political protection flow in opposite directions, binding elites, security forces, intermediaries, and artisanal workers into a single extractive system.

Recognizing this structural logic carries important implications for governance and development practice. Reform efforts that target only the most visible, lowest-level manifestations of criminalized mining — informal miners and small-scale smugglers — while leaving elite capture and security-sector complicity unaddressed are likely to produce, at best, temporary or displaced effects. A more promising approach combines transparency and accountability reforms at the apex of the hierarchy with formalization and livelihood support at its base, underpinned by regional cooperation and demand-side regulation in global mineral markets. Future research should further examine the political economy conditions under which such multi-level reform coalitions can be assembled and sustained, and should extend the comparative analysis developed here to additional mineral economies, including bauxite, lithium, and rare-earth extraction, as global demand for energy-transition minerals continues to intensify pressure on African extractive governance.

Addressing criminal ecosystems in African mining requires interventions calibrated to the specific layer of the Mafia's Republic hierarchy at which they are targeted, since measures aimed only at the artisanal base — such as periodic crackdowns on informal miners — are unlikely to disrupt the political and commercial incentives operating higher in the hierarchy. Table 5 sets out a multi-level policy framework aligned with the layers identified in Figure 1.

Target layer	Policy instrument	Implementing actors
Political-bureaucratic elite	Beneficial-ownership registries for mining licences; independent licensing audits	National legislatures; anti-corruption agencies; EITI
Security apparatus	Vetting and rotation of security personnel at mine sites; independent oversight bodies	Ministries of defence/interior; regional security bodies
Trading networks	Mandatory supply-chain due diligence and traceability certification	Importing-country regulators; industry associations
Local intermediaries / armed actors	Conflict-sensitive mine-site monitoring; demobilization incentives	UN missions; regional bodies (ECOWAS, SADC, AU)
Artisanal base	Formalization pathways, cooperative financing, and safety standards	National mining ministries; development agencies; NGOs

Table 5. A multi-level policy framework for addressing criminal ecosystems in African mining, aligned to the Mafia's Republic hierarchy.

Three cross-cutting priorities merit particular emphasis. First, regional harmonization is essential given the inherently cross-border character of smuggling routes; unilateral national reforms are easily circumvented through re-routing via neighbouring jurisdictions with weaker controls. Second, demand-side regulation in importing and refining countries — including mandatory due diligence legislation modelled on existing conflict-minerals frameworks — can shift incentives across the entire value chain by raising the reputational and legal costs of sourcing from criminalized supply networks. Third, formalization of artisanal mining, when accompanied by accessible financing, secure land tenure, and fair-pricing mechanisms, offers a pathway to simultaneously reduce criminal capture and improve livelihoods, but requires sustained political commitment given that formalization directly threatens the rent streams of the elite and security actors who benefit from the status quo.

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