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A Political Ecology of Sand Mining in Awka, Southeast Nigeria

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Abstract

This study applies a political ecology lens to examine the drivers, actor relations, and consequences of sand mining in Awka, the capital of Anambra State in southeastern Nigeria, a region already prone to severe gully erosion. Adopting a qualitative case study design, data were generated through 32 semi-structured interviews with artisanal miners, community and traditional leaders, government officials, and residents, complemented by observation at four active mining sites and review of regulatory documents. Data were analyzed thematically using Ribot and Peluso's theory of access as an interpretive framework. Findings show that Awka's rapidly expanding construction sector has driven a sand economy governed less by statutory regulation than by an informal alliance of land-owning families, community and youth leaders, transport unions, and complicit local enforcement agents, each drawing on distinct rights-based, structural, relational, or illegal mechanisms of access. This governance arrangement distributes benefits unevenly while concentrating environmental costs—gully initiation, riverbank collapse, stream siltation, and farmland degradation—on downslope farming communities who are largely excluded from decision-making. The study argues that sand mining in Awka is best understood not as a simple regulatory failure but as a politically structured system of access in which environmental degradation and livelihood benefit are two sides of the same set of power relations. It recommends a hybrid governance model that formalizes artisanal mining, redistributes levies toward site rehabilitation, and strengthens community participation in environmental oversight.

political ecology, sand mining, theory of access, gully erosion, Awka, Southeast Nigeria

Background

Sand and gravel are among the most extracted solid materials globally, underpinning the concrete and asphalt that drive urban construction, yet their extraction is often treated as ecologically and politically unremarkable relative to higher-profile resources such as timber, oil, or minerals. In rapidly urbanizing Nigerian cities, informal and semi-formal sand mining has become a significant, contested land use with material consequences for soil stability, water systems, and rural livelihoods. Awka, the capital of Anambra State, has experienced sustained

construction-driven demand for river and pit sand since its elevation to state capital status in 1991, a demand intensified by population growth, road expansion, and peripheral residential development.

Anambra State is already one of Nigeria's most gully-erosion-affected regions, with soft, poorly consolidated sedimentary formations highly susceptible to rill and gully initiation once vegetative cover and surface stability are disturbed (Egboka, 1993; Igbokwe et al., 2008). Sand mining, which strips vegetation, excavates streambanks, and alters natural drainage, interacts with this pre-existing vulnerability in ways rarely assessed before extraction begins. Yet sand mining also provides income to landowners, artisanal laborers, and transport operators in a local economy with limited formal employment, meaning any account of its consequences must explain both why it persists and why it is harmful.

This tension is the central concern of political ecology, a field examining environmental change as inseparable from power, access, and political-economic structure rather than a purely technical problem (Blaikie & Brookfield, 1987; Bryant & Bailey, 1997). Political ecology resists framing degradation as simply the product of ignorance, poverty, or weak enforcement, tracing instead the layered social relations and unequal power arrangements that determine who benefits from extraction and who bears its costs (Robbins, 2012; Watts, 2000). Nigerian studies have documented sand mining's erosion, water pollution, and livelihood effects in the Niger Delta and elsewhere (Amangabara & Ejenma, 2012; Nwankwoala, 2011), but few examine the phenomenon through an explicit political-ecological account of access and power in the erosion-prone Southeast that Awka represents.

Purpose of the Study

This study examines sand mining in Awka through a political ecology framework, asking: (a) which actors participate in the local sand mining economy and through what mechanisms do they access sand and the benefits it generates; (b) what environmental and socioeconomic consequences result, and how are they distributed across groups; and (c) how do existing governance arrangements shape, or fail to shape, these outcomes.

Political Ecology and the Theory of Access

This study draws on two complementary strands of political ecology. Blaikie and Brookfield's (1987) "chain of explanation" situates local land-use decisions within nested layers of household, community, state, and global economic pressures, cautioning against explanations that stop at the

individual land user. Applied here, an artisanal miner's decision to excavate a riverbank cannot be understood apart from the construction boom driving demand, the absence of alternative livelihoods, and the incentives facing officials who might otherwise restrict the activity.

Ribot and Peluso's (2003) theory of access distinguishes access—the ability to benefit from a resource—from formal property rights, identifying overlapping mechanisms through which access is gained: rights-based mechanisms grounded in law or custom, and illegal or extra-legal structural and relational mechanisms including capital, technology, social identity, and authority (see also Peluso, 1992, on resource control in contested forest landscapes). This framework suits sand mining contexts where statutory licenses coexist with, and are frequently overridden by, customary land claims and informal arrangements with enforcement agents. Bryant's (1998) call to attend to actors across scales further shapes the analytical structure below, organized around actors, impacts, and governance rather than a single undifferentiated narrative of decline.

Study Area

Awka lies within Anambra State's undulating sedimentary terrain, drained by minor streams feeding the wider Niger–Anambra river system. The city's soils are dominated by poorly consolidated sands of the Coastal Plain Sands formation, geologically similar to material that has produced Anambra's extensive gully networks elsewhere (Egboka, 1993). Since becoming state capital, Awka has undergone substantial infill and peripheral development, with active sand extraction concentrated at riverbed and floodplain sites along the Amansea and Mgbakwu axis, in Ifite-Awka, and around Amawbia, typically operated by small artisanal groups using hand tools and, increasingly, mechanized dredging pumps.

Method

Research Design and Data Collection

The study adopted a qualitative case study design, appropriate for generating a contextually grounded, actor-centered account of a socially embedded environmental practice rather than a generalizable statistical estimate (Robbins, 2012). Awka was selected for its regulatory salience as a state capital and its geomorphological vulnerability to erosion-related harm from land disturbance. Data were generated through 32 semi-structured interviews across four participant categories, summarized in Table 1: artisanal sand miners, community and traditional leaders, government and regulatory officials, and residents or farmers near mining sites. Miners and community leaders were recruited purposively at four active mining locations, while residents

and farmers were recruited through snowball referral. Interviews addressed participants' roles in the sand economy, perceived benefits and harms, relationships with other actors, and views on regulation, conducted in English and Igbo depending on preference and later transcribed and translated where necessary. Interviews were supplemented by direct observation at each site—noting extraction methods, site conditions, and visible erosion or vegetation loss—and by review of secondary documents, including Anambra State Environmental Protection Agency correspondence and local government council inspection records.

Table 1

Profile of Study Participants (N = 32)

Participant Category	n	Sampling Approach / Sites
Artisanal sand miners	12	Purposive; four active riverbed and pit sites (Amansea, Mgbakwu axis, Ifite-Awka, Amawbia)
Community and traditional leaders	6	Purposive; village heads and youth-association leaders in mining-affected communities
Government/regulatory officials	5	Purposive; Anambra State Environmental Protection Agency, Ministry of Lands, local government council
Residents and farmers near mining sites	9	Snowball; households and farm owners adjoining mining pits and haulage routes
Total	32	—

Note. Interviews were conducted across four mining-affected communities on Awka's periphery.

Data Analysis

Transcripts and field notes were analyzed thematically following an inductive-deductive hybrid approach: initial codes were generated inductively, then organized deductively around the access mechanisms identified by Ribot and Peluso (2003)—rights-based, structural, relational, and illegal or extra-legal access—alongside emergent themes concerning environmental and socioeconomic impact. Coding was conducted manually with cross-checking between two

coders, and divergent codings were resolved through discussion and re-reading of the original transcript context.

Findings

Actors and Mechanisms of Access

Sand mining in Awka is sustained by a layered set of actors whose participation rests on distinct and sometimes overlapping mechanisms of access, summarized in Table 2. Land-owning families exercise rights-based access grounded in customary tenure, charging site fees or ongoing rents. Artisanal miners rely on relational access—labor, tools, and kinship ties to landowners and community leaders—to secure a place at a site and a share of proceeds; as one miner on the Amansea axis put it, "nobody can just come and start digging on our land without seeing the youth leader first." Community and youth association leaders occupy a structural position: their authority over communal consent grants or withholds a site's social license to operate, and the levies they collect fund community projects as well as, by several accounts, personal enrichment. Truck owners and transport unions control haulage routes and vehicles, a structural resource that transforms mined sand into marketable material; their fees were described as the largest cost within the sand supply chain after the sand itself. Local government and security agents were repeatedly described as accessing informal tolls through discretionary enforcement—an illegal or extra-legal mechanism in Ribot and Peluso's (2003) typology—in contrast to state regulatory agencies, whose rights-based statutory authority to issue permits and require environmental clearance was widely reported to be rarely exercised.

Table 2

Key Actors in Awka's Sand Mining Economy and Their Access Mechanisms

Actor	Primary Interest	Mechanism of Access	Basis of Power
Land-owning families	Land rent, one-off site fees	Customary land ownership	Rights-based (inheritance, custom)
Artisanal miners	Daily wage income	Labor, tools, physical presence at site	Relational (labor relations, kinship ties)
Community/youth leaders	Levies, local influence	Control of community consent and site access	Structural (social identity, authority)

Truck owners/transport unions	Haulage fees	Control of vehicles and access roads	Structural (capital, technology)
Local govt./security agents	Informal tolls, patronage	Enforcement discretion, checkpoints	Illegal/extra-legal (coercion)
State regulatory agencies	Statutory license fees, formal control	Mining permits, environmental clearance	Rights-based (law), rarely enforced

Note. Access mechanism categories follow Ribot and Peluso's (2003) theory of access.

Environmental and Socioeconomic Impacts

Participants and site observations converged on a consistent set of impacts, summarized in Table 3. Environmentally, riverbank excavation and vegetation removal were repeatedly linked to new or widening gully heads, riverbank collapse, and downstream siltation of streams already burdened by Anambra's characteristic soil instability. Farmers near several sites reported declining yields on land adjoining pits, attributing this to lowered water tables and soil disturbance, while some described outright loss of farmland to expanding excavation. Economically, however, the same activity was described as one of few reliable income sources for young men without formal employment, with levy revenue reportedly supporting local infrastructure such as borehole repair and road grading.

This coexistence of harm and benefit within the same set of relations is precisely the pattern political ecology anticipates: environmental costs and economic gains are not separate outcomes but two faces of a single, politically structured system of access (Blaikie & Brookfield, 1987). The uneven distribution of these costs and benefits was itself a source of tension, with several farmers describing unresolved compensation disputes and community leaders acknowledging rivalry over levy control at the more lucrative sites.

Table 3

Summary of Observed Environmental and Socioeconomic Impacts

Impact Domain	Observed/Reported Effects	Most Affected Group
Environmental	Gully initiation and widening, riverbank collapse, stream siltation,	Downslope farming communities; entire watershed

	loss of riparian vegetation	
Land and livelihoods	Farmland loss or degradation, declining crop yields near pits, reduced water quality	Smallholder farmers, women food-crop growers
Economic	Wage income for young men, haulage business growth, revenue for community associations	Miners, truck owners, community leaders
Social/conflict	Disputes over levy sharing, tension between miners and farmers, chieftaincy rivalries over site control	Community leaders, adjoining landowners
Governance	Non-enforcement of environmental impact assessment, informal taxation, weak site rehabilitation	State agencies (capacity); public (unaddressed harm)

Note. Compiled from interview accounts and site observation across four mining locations.

Governance Gaps

Government officials acknowledged that statutory permit and environmental impact assessment requirements existed but were inconsistently enforced, citing limited monitoring capacity, the number of small mobile sites, and the political sensitivity of disrupting an activity that provides visible local employment. This is consistent with the extra-legal access enjoyed by local enforcement agents documented above: enforcement discretion becomes a resource to be traded rather than a rule applied uniformly. No participant, across any category, reported awareness of a site that had undergone formal environmental clearance or subsequent rehabilitation.

Discussion

These findings support a reading of sand mining in Awka not as a simple case of regulatory failure or rural poverty driving environmental harm, but as a politically structured system in which multiple actors draw on distinct rights-based, structural, relational, and extra-legal mechanisms of access to capture different shares of benefit, while environmental costs are displaced onto downslope farming communities with comparatively little access to any of these mechanisms (Ribot & Peluso, 2003). This distributional pattern echoes Blaikie and Brookfield's (1987) chain of explanation: the individual miner's excavation decision is shaped by household

economic necessity, but that necessity is itself produced by limited formal employment, urban construction demand, and a governance structure that finds it easier to informally tax extraction than to regulate or rehabilitate it.

The coexistence of competing degradation narratives—miners and community leaders describing sand income as essential livelihood support, while farmers and some officials describe the same activity as destructive—reflects the contested nature of environmental knowledge political ecology foregrounds (Fairhead & Leach, 1996); a governance response addressing only one narrative while ignoring the other is likely to fail or provoke resistance. These findings should be read in light of the study's qualitative, single-city design, which prioritizes depth of actor-centered explanation over statistical generalizability; future research could extend this framework comparatively across other erosion-prone Southeast Nigerian towns or incorporate longitudinal site monitoring.

Conclusion and Policy Implications

Sand mining in Awka operates through a layered system of access in which land-owning families, miners, community leaders, transport operators, and local enforcement agents each capture distinct benefits, while environmental costs concentrate on farming communities with the least access to any share of that benefit. Addressing this pattern requires governance beyond stricter statutory enforcement alone: a hybrid model that formalizes artisanal mining associations, channels a defined share of existing levies into mandatory site rehabilitation and buffer-zone maintenance, and creates a genuine role for affected farming communities in site approval decisions is more likely to align incentives than an approach that treats the problem as insufficient policing. Without such realignment, sand mining will likely continue to expand alongside Awka's construction boom, compounding a gully erosion burden the state can ill afford.

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