

Abandoned Mines: A Danger to Communities Across Nigeria

By Olajide Adelana

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IN THE STATE OF ENUGU in southeastern Nigeria, a once-forested valley sits silent as a graveyard, with chunks of coal waste littering the ground. Once swarming with machinery, the valley was the site of the Onyeama Coal Mine, which was closed in 2002 when the Nigerian Coal Corporation went bankrupt. Now the area is mostly farmland.

But the land is not fertile. A farmer named Sunday Okeke points to the maize he planted, which sprouted into healthy green stalks before starting to wilt. He and other residents of the Onyeama community who once worked in the mine resorted to farming to feed their families, but Okeke rarely makes a profit.

"I only plant vegetables and some crops that are not deep rooted, because they do not require as much nutrients and fertilizers," he says. "I tried planting maize this year and I am disappointed at the outcome."

Many farmers in this area are unaware that mining activities removed the topsoil, which contains much of the moisture and nutrients that crops need. They end up spending money on fertilizers, which reduces their profit. The mine also polluted the water needed for farming and household use. Bright-orange runoff from tunnels at the abandoned mine drains into local water sources.

A Declining Industry

Coal was one of Nigeria's primary exports for much of the 20th century. But changes in the Nigerian energy market increased the use of petroleum as a fuel source. The coal industry was further disrupted by the outbreak of the Nigerian Civil War in 1967 and the Nigerian Enterprise Promotion Decree in 1972, which sought to transfer business ownership to Nigerians and contributed to declines in foreign investment and the departure of many foreign mining companies.



An abandoned mining site in the Barkin Ladi area of Plateau State.

The country has considerable remaining coal reserves, but production has dwindled over the past 20 years, hitting a record low of [40,000 metric tons](#) in 2012.

As of 2017, Nigeria had an estimated [1,200 identified abandoned mining sites](#)—sites where mining activities ceased without proper closure or reclamation and continue to degrade the environment and pose physical dangers in the form of weakened and collapsing mine shafts, sinkholes, and water-filled pits.

The [2007 Nigerian Minerals and Mining Act](#) requires “progressive reclamation”—reclamation activities carried out simultaneously with mining operations—in newly approved industrial mining projects. The act also calls for mining companies to establish a reserve fund for environmental protection, mine rehabilitation, reclamation, and closure costs. But most of the now-abandoned mines in Nigeria, including in Enugu, predate the 2007 legislation.

Reclamation includes filling depressions or hollows with soil or rock removed during excavation and planting trees to stabilize and restore the mined area. [Best practices](#) also include repairing wildlife habitat; removing office buildings, processing facilities, and transportation equipment; and sealing mine shafts and other openings.

Devastated Communities

In the nearby community of Akwuke, residents say the abandoned Okpara Mine was closed without any efforts to address impacts on the community.

“With the exception of those who were employed when the coal mine was still active, there is no tangible benefit our community has gained from mining,” says youth community leader Sunday Nsude, pointing to an unpaved road that has deteriorated due to flooding and poor maintenance.

Simon Ude, who worked as a security guard at the mine from 1996 to 2006, says he was laid off when the mine closed and given no severance

pay. [Nigerian labor laws](#) require compensation for laid-off employees based on the length of their employment. Ude started a firewood business, but it does not earn him enough income.

Mike Achio, who once worked in the Onyeama Coal Mine and now heads a community-led security team, says that mine is now a hideout for criminals. “We regularly contend with criminal elements who have mastered the art of coming into the community to inflict pain on residents and escape through the abandoned mine,” he says. “Recently, we arrested some people at night peddling hard drugs, including cocaine and heroin, in the community.”

Respiratory diseases—including coal workers’ pneumoconiosis, commonly known as black lung disease—are also [common among miners](#), due to long-term exposure to airborne coal dust. “Although I am lucky and have no issues with my health, many of my colleagues are not,” says Achio. “They are battling with different health problems such as chest pains and breathing problems. The majority of them were left to bear the consequences of long years of working at the mine without any help.”

Dr. Onwubere Basden Jones, an expert in cardiovascular and congestive heart diseases at the University of Nigeria, says that elderly people in mining communities are likely to have co-morbidities associated with mining. “Years back when mining was still actively going on in these communities, there was an upsurge in the number of patients seeking medical attention for different diseases, including respiratory diseases,” he says.

A City on the Verge of Collapse

Communities along the mining corridors in Enugu face a range of environmental challenges, including flooding, landslides, and significant erosion. Residents of Enugu-Ngwo, Amuzam, Agbaja Ngwo, and Nsude report that houses and properties have been washed away by gully erosion caused by heavy rains and landslides.

Despite these challenges, little research has been conducted on the impact of these abandoned mines on the environment.

"A lot of people do not really know the extent of the damage mining did to Enugu," says Chinedu Nwafor, executive director of the Africa for Africa Initiative. He adds a warning about the state's capital city of Enugu: "The city is sitting on a ticking time bomb. If nothing is done, Enugu might collapse. I don't know why the government is yet to see this as an emergency."

The network of mining tunnels in Enugu is poorly mapped, so no one knows their full extent or how the abandoned mines may be exacerbating flooding and erosion issues. [Local media](#) have reported that the area is at risk of cave-ins. "Sometimes in the city you will notice a lot of earth movements, and the land will collapse inward. This shows that that place is empty below," says Nwafor.

Lack of Government Action

State and federal officials have paid some lip service to the impacts of abandoned mines on human health and the environment but have made little effort to address them. Ayodeji Adeyemi, a special adviser to the minister of mines and steel development, did not respond to requests for comment, despite promising on several occasions to forward queries to the appropriate desk and provide a response.

Senator Ike Ekweremadu, chairman of the Senate Committee on the Environment and one of three senators representing Enugu State in the National Assembly in Abuja, did not respond to multiple emails. His personal assistant, Uche Anuchukwu, acknowledged receipt of the inquiries made but did not reply.

Enugu State's commissioner for environment and mineral resources, Chijioke Edeoga, denied knowledge of any challenges posed by abandoned mines. He maintained that his office has never received an official complaint about the matter.

"I am not aware," he said. "There is no official complaint from these communities to my office. The state government cannot be blamed, as the mining sector is under the federal government. They should be the one to put things in order."

The federal government is making some efforts as part of the Nigeria Erosion and Watershed Management Project, but experts say that an expansive and thorough environmental audit should be conducted across the entire mining corridor in Enugu to inform strategies for long-term, sustainable solutions.

"Any palliative measures or reclamation done without a comprehensive environmental audit to ascertain the level of devastation and the funding required to remedy it is unlikely to be a sustainable solution," says Nwafor. "It is superficial and amounts to poor utilization of funds."

Residents consider the government's efforts to be merely cosmetic. One resident of Enugu-Ngwo who identified himself as Chinedu acknowledged the efforts but said more funding and commitment are needed given the number of affected sites.

Small-Scale Mines and a Legacy of Ruin

Nigeria also has many artisanal and small-scale mines that provide a livelihood for thousands of people, most of them mining gold, gemstones, and cassiterite (a tin oxide mineral). [This segment of the extractives industry employs](#) an estimated 400,000 to 500,000 people and currently accounts for more than 90% of solid mineral extraction in the country.

However, this activity is poorly regulated by the government. Most of these miners operate outside the formal regulatory regime, without licenses or permits. As a result, communities often suffer from environmental degradation and negative health consequences. The mining sites are rarely properly closed or remediated, creating hazards for communities long after miners have moved on.

In Ebonyi State, the landscape is pocked with abandoned mining pits. Two children play in one of them near the town of Ihotor-Ameka, singing as they run in circles and then collapse on a heap of muddy soil, giggling.

Okeh Gloria, a resident, recalls the day in 2019 when her third child, 2-year-old Sylvanus, was in pain and fighting for his life. His eyes had rolled back in his head, his mouth closed. His muscles tightened and he struggled to breathe. Gloria and her husband were distraught.

Gloria squeezed his jaws open and poured palm oil down his throat. She had seen many others use this remedy and thought it might help. But Sylvanus's condition only worsened.

"I cried and prayed when I saw him convulsing. I could not believe what I was seeing," Gloria says. Sylvanus was later rushed to hospital, where he stayed for six days before he regained consciousness and began his journey to recovery. The family had to pay 50,000 naira for his treatment—more than US\$100.

The couple suspected heavy metal poisoning as the cause of their child's sickness. Ihotor-Ameka has huge deposits of minerals, notably lead and zinc, and is littered with mining pits from both abandoned and active artisanal and small-scale mines. When the pits are flooded after heavy rains, the miners pump the water into the surrounding environment, including rivers and streams. The risk of water and soil pollution with heavy metals is high.

"Although we could not explain it, we knew the reason for his ailment cannot be dissociated from our environment," Gloria says. Several weeks after her son became sick, other residents began to show similar symptoms.

"My neighbor's son was sick and convulsing," she says. "Two days later, he died. He was only 3 years old."

Water samples collected from the area and tested at the Institute for Agricultural Research and the National Research Institute for Chemical Technology had lead concentrations of nearly 408 parts per

million (ppm); for reference, a [U.S. Environmental Protection Agency \(EPA\)](#) rule requires systems to monitor drinking water at customer taps if lead concentrations exceed 0.015 ppm.

Heavy metals can harm the body even in small doses. Lead exposure can be especially dangerous for children, causing damage to the brain and nervous system, stunted growth and development, behavioral and learning challenges, and hearing and speech problems. Seizures and convulsions are among the more severe neurological symptoms associated with lead overexposure.



Abandoned mining pits on farmland near a stream in the Sabon Barki area of Plateau State.

Diagnostic capacity is lacking in Nigeria, including testing for heavy metal poisoning. People come down with strange illnesses that often are left undiagnosed, even after evaluation by experienced physicians.

But this is not news. In 2010, the World Health Organization [reported](#) high incidence of convulsions and death in young children due to lead poisoning in five mining villages in Nigeria's Zamfara State. The number of affected children [continues to grow](#).

Many blame the informal and unregulated activities of artisanal and small-scale miners. "The havoc that these artisanal and small-scale miners cause is often overlooked because they don't necessarily carry heavy machinery to the site," says

David Bade, a farmer whose land is threatened by abandoned mining pits in the Yelwa community in Nasarawa State.

“They came in droves, took over our farmlands, and started digging for tourmaline, a gemstone,” he adds. “Several months later, they vacated the site and moved elsewhere.”

Bade says he has noticed a sharp decrease in his harvests because his farmland is no longer fertile. “Before, I used to harvest up to 300 bags of maize; now I rarely get up to half of that. I have also been attacked by snakes and other reptiles that hide in the holes. I have lost two of my dogs to snake attacks.”

This is not unexpected, says Ibrahim Yahaya, an official of the Nasarawa State Ministry of Environment and Natural Resources. “Mining can severely alter the soil and reduce its fertility,” he says. “When miners dig into the earth for these minerals, they inadvertently dump the excavated materials on the topsoil. This is called overburden, and it makes it more difficult for crops to access nutrients.”

Soil samples collected from Bade’s farmland and tested at the Institute for Agricultural Research and the National Research Institute for Chemical Technology showed levels of metals that are poisonous to plants, including 1,350 ppm of copper. [According to the U.S. EPA](#), normal soil has a copper content of 1 to 200 ppm. The concentration of zinc in the soil was 2,090 ppm, also much higher than normal levels. The concentration of lead was 1,560 ppm; the [EPA recommends](#) avoiding growing vegetables in soil with lead concentrations of more than 400 ppm.

How Large Companies Enable Informal Mining

Artisanal and small-scale miners operate as part of a broader mining ecosystem in Nigeria. With limited access to capital, they are often financed by sponsoring companies that take a large cut of their profits.

Some larger mining companies have reportedly given artisanal miners access to concessions that they are not actively mining. A Nigerian Extractive Industries Transparency Initiative [audit report](#) covering activities in the extractive sector from 2007 to 2010 found that only 30% of the companies holding mining titles were engaged in active quarrying, mining, and exploration.

In Ebonyi State, most big mining companies with or without licenses grant access to their mining sites to artisanal miners, often members of the local community. The company pays negotiated fees to the landowner and local authorities but retains exclusive rights to the mined commodity. One source noted that many of these companies are Chinese.

The government has signaled its intention to formalize the sector, improve revenue collection, and increase the contribution of solid minerals to the country’s gross domestic product. But progress has been slow and uneven, complicated by a lack of geological information and limited government capacity. Mine closure and remediation do not appear to have featured heavily in discussions about formalization.

One small-scale granite miner in the Umuogharu community in Ebonyi State, who declined to give her name for security reasons, said the state government is aware of the informal mining activities. “We pay the necessary levies and go about our activities,” she said, adding that discussions about abandoned mines and proper mining site closure have been rare in interactions with the state government.

Neither the mining companies nor the artisanal miners take responsibility for the proper closure and reclamation of mining sites. They simply move on to another location. The exploitative behavior of the large companies is often a [root cause](#) of community corruption and violence, and it results in a huge loss of revenue to the government. In turn, poor revenues from the sector make budgetary allocations and funding for reclamation of abandoned mines difficult for the government.

Tin Mining in Plateau State

In Plateau State, years of complaints by mining communities about the wreckage caused by abandoned mining pits have fallen on deaf ears. Belied by the beautiful scenery, abandoned mining pits in Jos city are now potential death traps for residents of the area.

Tin was discovered in the Jos Plateau at the turn of the 20th century, and colonial mining began soon thereafter. These tin mines were largely abandoned following the 1972 nationalization policy, which [broke the monopoly of foreign interests](#), particularly British firms. Decades later, tin mining communities are still struggling with the [negative effects](#) of mining on human health and the environment.

Today, informal artisanal and small-scale miners operating on meager profit margins work in these abandoned mines. This carries a unique set of risks and dangers.

[In December 2019](#), an inactive mining pit in the Zawan community collapsed, killing six people who were illegally prospecting for tin and other minerals. Eyewitnesses said that more than 50 people were in the pit before it collapsed.

In Keffi, a town in Nasarawa State, the Five Star Mining Company allegedly vacated its mining project without reclamation after an outcry by area residents over incessant blasting of rocks. The abandoned site sits behind a secondary school.

“Each time they blasted the rocks, strong vibrations reverberated throughout the entire area,” says local resident Garakuwa Zubairu. “Our buildings began to crack from the foundation.” He said residents complained to the company and asked them to reduce the blasting activity, but to no avail. They brought their complaints to state government authorities, who inspected the site and directed the company to stop work. The company then vacated the site without doing reclamation work.

In the town of Sabon Barki, residents are fearful when it rains because of how abandoned mining sites channel floodwaters. In April 2021, a 4-year-old girl was swept away after a heavy downpour.

Slow Progress on Reclamation

Government remediation efforts date back to 1955, when the federal government reclaimed abandoned mining sites managed by the government of the Northern Region. Reclamation of several other abandoned sites followed in 1980.

In 2017, the Ministry of Mines and Steel Development, which oversees the solid minerals subsector in Nigeria, said it would [spend 1.67 trillion naira](#) (US\$3.6 billion) to reclaim more than 1,600 abandoned mine sites across the country. A total of [32 mining sites](#) were reclaimed between 2007 and 2019, at a cost of 2.39 billion naira (US\$5.4 million), or about 75 million naira (US\$167,836) per mine—less than the amount originally projected. (In 2014, a ministry official named [Salim Adebgoyega](#) had put the reclamation cost per abandoned mine at 80 million to 100 million naira [US\$179,774 to US\$224,717], depending on the size of the site.)*

Progress has been much slower than expected. The ministry initially projected that 100 sites would be reclaimed annually between 2007 and 2020. An inventory of abandoned mines and quarries commissioned by the ministry in 2017 to evaluate the environmental and social risks associated with past mining activities is yet to be released officially. The Environmental Protection and Rehabilitation Fund (EPRF) called for in the 2007 Nigeria Mining Act is not fully operational.

The ministry did not respond to a Freedom of Information Act (FOIA) request submitted on September 29, 2021, asking for specific details about progress on mine remediation and closure—including a list of all abandoned mining sites identified by the ministry, reclaimed abandoned mining sites, the cost of the reclamation of the

* The exchange rate used in this report is 445.0039 naira to US\$1.

sites, and the status of the EPRF. The ministry acknowledged receipt of the request and asked for ample time to compile the required information, adding that the process of revalidating abandoned mines and quarries was ongoing.

The government has allocated significant funding to the reclamation of abandoned mines but has achieved little in terms of value for money. Analysis of the ministry's budget showed that at least 2.4 billion naira (US\$5.5 million) was spent on activities *related* to reclamation between 2015 and 2020. A further breakdown revealed that 1.9 billion naira (US\$4.3 million) was budgeted for actual reclamation of an unspecified number of abandoned mines during that same period. In 2018 and 2019, the government spent 78.3 million naira (US\$175,954) on revalidating abandoned mining sites nationwide and a whopping 463 million naira (US\$1 million) on logistics support for a special mines surveillance task force in 2020.



A tin miner at an artisanal mine in the Wamba area of Nasarawa State.

One of the reclaimed sites in the Barkin Ladi area of Plateau State is still prone to flooding and ecological problems years after the purported reclamation in 2017. Residents speak critically of the work done.

"We cannot farm on these sites. The land is not fertile. No bioremediation was carried out," says Dafum Chung, a resident. "They just came to sand-fill the site and went away. Although the gully erosion subsided, the problem of flooding is still persistent."

He adds: "I used to farm close to my house until flooding and erosion caused by mining destroyed my farmland. Although I have relocated to another area to continue my farming, my friends who still farm there are always complaining of poor harvest."

The Ministry of Mines and Steel Development acknowledged receipt of a FOIA request for procurement records, including budgetary allocations and lists of contractors engaged, but the request was not fulfilled by publication time.

Can Communities Sue?

Nigeria has a federal system of government, but states have limited power. Mining is on the exclusive legislation list—a list of issues over which the federal government has exclusive legislative powers. This means states cannot advance their own legislation on mining-related issues, including mine closures. State governments also cannot enforce federal legislation.

"You really cannot blame the state governments," says Abiodun Baiyewu, Nigeria country director at Global Rights. "The federal government is quick to remind you that the benefits of the minerals primarily belong to the commonwealth at the federal level. It was not until 2017 that benefits started to trickle down to the local communities. Even so, the benefits have been negligible because the government still earns so little from solid minerals due to massive hemorrhages in revenue."

However, one potential avenue for states to regulate their mining sectors remains unexplored. Section 19 of the Minerals and Mining Act of 2007 provides for a state-level governance apparatus for mining, known as the Mineral Resources and Environmental Committee. To date, this apparatus is yet to be fully explored.

Communities that have been harmed by abandoned mines have limited avenues for recourse, including through national legal systems. Chinedu Bassey, a program manager at the Civil Society Legislative Advocacy Centre, argues that several international human rights instruments to which Nigeria is a

signatory are yet to be properly legislated in the country. These include the [UN Guiding Principles on Business and Human Rights](#). Ten years after endorsing them, Nigeria is yet to develop a national action plan to implement the principles, which allow aggrieved communities to seek redress in court.

Hamzat Lawal, chief executive of Connected Development, a nongovernmental organization that works to empower marginalized communities in Nigeria, says the real question is whether the Nigerian justice system is reliable. "If we're being realistic, these communities do not have the resources to pursue a case against the government, and while that reflects the weakness of our judicial institution, it also shows the extent of failure of leadership in the country," he says.

Regardless of the challenges, human rights lawyer and activist Inibehe Effiong believes that mining communities can sue the government or businesses if they can provide evidence and proof beyond a reasonable doubt. Indeed, beyond the Minerals and Mining Act of 2007, [Section 17 \(2d\)](#) of Nigeria's constitution states that a community's natural resources must not be exploited except for the good of the community.

Some international avenues are also available, particularly if a multinational mining company has violated the rights of communities through inadequate mine closure. For instance, communities could file a grievance with [National Contact Points](#) that are responsible for business conduct in the company's home country or they could request a UN Special Rapporteur investigation.

These avenues are rarely explored, however, due to lack of information and low literacy levels among residents of these communities. Communities can seek redress only if they are aware of their rights and are empowered with the information they need to demand justice, accountability, and transparency from government entities and other stakeholders in the extractive industries.

Baiyewu says that knowledge and participatory dialogue platforms are important. "Let's start with providing a basic knowledge of what mining entails, the likely impacts, and the rights of mining host communities," she says. "Mining host communities need to access information on how to air their grievances and ensure ease of access to the relevant agencies of government."

Lawal has a similar view. Rather than sue the government, he says, leaders of mining communities would do better to learn how to engage the government as partners. "It's the first step in the right direction, and it disarms a government that is quick to defend itself against its own citizens."

ABOUT THE AUTHOR

Olajide Adelana is an investigative writer and editor who is passionate about advancing accountability and transparency in the service of social justice. He recently served as a field communications officer for the United Nations Office for Project Services, where he focused on water supply and sanitation issues.

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