



ARTISANAL AND SMALL-SCALE MINING AND YOUTH LIVELIHOODS IN THE DEMOCRATIC REPUBLIC OF THE CONGO

By Naledi Nhlapo

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Introduction

The Democratic Republic of Congo (DRC) has a long and significant history with artisanal and small-scale mining (ASM), which plays a crucial socio-economic role in the country (Delve Database, 2023; IMPACT, 2022). ASM has historically been important in regions like Katanga, with artisanal miners focusing initially on diamonds in the 1980s and later diversifying to include tantalum, tin, tungsten, gold, cobalt, and copper by the 1990s onward (Glencore, 2025). This sector is highly labour-intensive, employing many people—estimates suggest around 10 million Congolese depend on ASM for their livelihoods, with about 200,000 artisanal miners working specifically in cobalt and copper in Katanga and Lualaba provinces (World Bank, 2020; Delve Database, 2023).

Artisanal and small-scale mining plays a critical role in the DRC's economy, particularly in the extraction of cobalt, which is essential for global industries including electronics and electric vehicles (Öko-Institut, n.d.; ScienceDirect, 2018). ASM offers livelihoods to millions of Congolese and contributes significantly to local income and national exports (KPMG, 2014). However, its informal and often unregulated nature raises significant social, economic, and environmental concerns, especially for vulnerable populations such as youth (Wilson Center, 2024; Pact, 2023).

Despite its economic significance, ASM faces substantial challenges including hazardous working conditions, low wages, child labour, illegal mining on industrial concessions, corruption, and environmental degradation (IPIS Research, 2021; Mongabay, 2024). Formalization efforts have been ongoing since the early 2000s, but progress has been slow, and many miners continue to operate informally without secure rights or access to capital (ECDPM, 2023; UNECA, 2024). Mechanisms such as the Enterprise Générale du Cobalt were created to formalize the sector, yet designated artisanal mining zones remain limited (World Bank, 2020).

Artisanal mining contributes between 10–20% of the country's cobalt output, making it globally significant for battery and renewable energy supply chains (USGS, 2024; ScienceDirect, 2025). While the sector helps alleviate poverty due to low entry barriers, it also produces social and environmental harms, including health risks, local inflation, and depletion of community resources (Öko-Institut, n.d.; ECDPM, 2023).

International actors increasingly advocate supporting safer and more sustainable artisanal mining rather than banning it, emphasizing formalization, improved working conditions, and the reduction of child labour and environmental harm (Pact, 2023; Wilson Center, 2024; World Bank, 2020).

Background and Context

The Democratic Republic of the Congo (DRC) is endowed with some of the world's richest mineral deposits, particularly cobalt, copper, gold, and diamonds (Kadima, 2024). Artisanal and small-scale mining (ASM) is highly prevalent in the country and involves individual miners or small groups operating with limited capital and technology. ASM's contribution to mineral production in Congo is substantial, often constituting a significant share of global cobalt



production (Delve Database, 2023; World Bank, 2020). Despite its economic importance, the sector remains largely informal and is characterized by hazardous working conditions, weak regulation, and considerable social risks (Öko-Institut, n.d.).

Youth participation in ASM is extensive. Many young people turn to mining due to limited formal employment opportunities and persistent economic hardship. The sector's low entry barriers draw children, adolescents, and young adults who often lack alternative income-generating options (Pact, 2023; Wilson Center, 2024). While ASM can provide essential livelihoods, it also presents serious challenges related to health and safety risks, disrupted education, and social exploitation.

Governments and international organizations have struggled to effectively formalize and regulate ASM, attempting to balance economic benefits with the need to mitigate child labour and youth exploitation. Continued informality contributes to a complex landscape in which youth rights and protections remain fragile, requiring urgent policy and institutional attention (Öko-Institut, n.d.; World Bank, 2020).

Youth Involvement in Artisanal and Small-Scale Mining

"We wanted to hear first-hand from children and their parents about why they work in the mines and what it's doing to them — physically, mentally, emotionally," said Bob Kisulya, National Director of World Vision in the Democratic Republic of the Congo (World Vision, 2022).

Youth involvement in artisanal and small-scale mining (ASM) in Congo is driven primarily by socioeconomic factors including poverty, unemployment, and limited access to quality education (Pact, 2023; World Bank, 2020). The socioeconomic factors leading youth participation include:

- Poverty and financial hardship that compel youth to meet basic needs such as food, clothing, and school fees.
- Lack of employment opportunities and economic alternatives in remote mining regions.
- Limited access to quality education and low awareness of children's rights.
- The informal and unregulated nature of ASM, which makes mining a readily accessible livelihood.
- Economic empowerment initiatives demonstrating that improved financial literacy and alternative income opportunities can reduce youth and child labour.
- Social and community pressures, including family expectations and peer influence (IPIS Research, 2021; Wilson Center, 2024).

These factors combine to create a context where artisanal mining is both an economic necessity and one of the few available employment options for many young people in mining areas (Pact, 2023). Mining offers immediate income opportunities, attracting youth and even children to participate in activities such as digging, hauling, processing, and sorting minerals. Because ASM does not require formal training or registration, it remains highly accessible to young workers with limited skills.



Many young people work under precarious conditions that raise serious child labour concerns. In some mining areas, children as young as seven are involved in mining-related work, posing significant legal and ethical issues (U.S. Department of Labor, 2023; IPIS Research, 2021). Youth working in ASM face considerable health and safety risks, including poorly reinforced tunnels, lack of protective equipment, exposure to toxic substances, and frequent accidents. These conditions are associated with long-term health consequences such as respiratory illnesses, skin diseases, and other chronic conditions (Öko-Institut, n.d.; Frontiers in Environmental Science, 2025). Girls and young women face additional vulnerabilities, including gender-based violence and discrimination (Save the Children, 2022).

Evidence from interviews conducted by World Vision highlights the severity of these risks: 19% of children reported witnessing a child die at an artisanal mining site, 87% experienced body pain or injury, and 67% reported persistent coughing (World Vision, 2022).

Despite these challenges, ASM may provide some youth with short-term income, skill acquisition, and limited pathways toward entrepreneurship or alternative employment. However, the negative consequences—including disrupted education, poor health outcomes, and exploitation—remain profound and underscore the need for integrated youth protection and livelihood strategies (Pact, 2023; World Bank, 2020).

Socio-Economic Impacts on Youth

This section highlights the nuanced socio-economic realities for youth in artisanal and small-scale mining (ASM), balancing limited economic opportunities against significant health, education, and social risks. The involvement of youth in ASM presents a complex interplay of socio-economic benefits and severe challenges. ASM offers immediate income opportunities for many young people who face limited alternatives due to widespread poverty and high unemployment in the Democratic Republic of the Congo. For youth, particularly in rural and mining regions, ASM provides a vital means of economic survival.

ASM offers several advantages for youth, especially in contexts where formal employment opportunities are scarce. The sector is often accessible with low barriers to entry, requiring minimal capital and skills, making it a viable income source for young people facing high unemployment rates. It provides diverse opportunities for income generation that can help youth support their families, invest in education, and develop livelihoods (Arthur-Holmes, 2023; Pact, 2023). Youth involvement may also promote skill acquisition and innovation, as educated youth and those gaining practical experience can introduce safer and more efficient practices into the sector (Arthur-Holmes et al., 2023). Moreover, ASM can serve as a stepping stone toward formal employment through apprenticeships and training initiatives that provide safer working environments and improved long-term prospects (Fair Cobalt Alliance, 2022). Formalization efforts and youth development programs increasingly aim to enhance these benefits while reducing associated risks (Pact, 2023; Fair Cobalt Alliance, 2022).

Despite these opportunities, the negative socio-economic impacts on youth engaged in ASM are profound. Child labour remains widespread in mining communities. Estimates suggest that



between 19,000 and 30,000 children under the age of 15 are involved in hazardous mining activities in cobalt-producing areas. These children often work in dangerous environments where landslides, tunnel collapses, and flooding are frequent. Exposure to dust and toxic substances contributes to chronic health problems and long-term physical harm (Manhart et al., 2024).

Educational deprivation is another major consequence. Many young miners drop out of school or attend irregularly because mining consumes their time and energy. Research shows that involvement in mining is associated with poor academic performance, high dropout rates, and limited future employment prospects. In some cases, youth participation in mining is also linked to psychosocial stress, substance abuse, and exploitative conditions that undermine wellbeing (Nkomo & Mpofu, 2022).

Another significant impact is the reinforcement of intergenerational poverty. Youth engaged in ASM often inherit precarious and informal livelihoods lacking job security or social protection. Without formal contracts or access to services, young miners remain highly vulnerable to economic shocks and exploitation. Even when earning income, most artisanal miners live at subsistence levels with limited prospects for upward mobility (Manhart et al., 2024).

Gender dynamics further intensify vulnerability. Young women and girls working in mining face heightened risks of discrimination, exclusion from higher-paying roles, and gender-based violence. These inequalities deepen social marginalization and restrict opportunities for empowerment and economic advancement (Child Rights Business, 2025).

Environmental and Community Impacts

Environmental consequences and youth involvement in artisanal and small-scale mining (ASM) are closely interlinked in several ways. Youth are often drawn to ASM due to poverty and limited alternative employment opportunities, despite being aware of associated health and environmental risks. The perceived economic benefits frequently outweigh concerns about environmental degradation, including deforestation, soil erosion, and water pollution caused by unregulated mining activities (Osei, 2017).

Youth miners' awareness of these environmental impacts does not always translate into safe or sustainable practices, partly due to limited knowledge, resources, and weak regulatory enforcement. Consequently, youth involvement can inadvertently exacerbate environmental damage through unsafe extraction techniques and poor waste management. At the same time, this presents an opportunity to engage youth in sustainable mining initiatives that emphasize environmental stewardship alongside economic benefits.

Moreover, the environmental degradation linked to ASM disproportionately affects local communities, including young people, by damaging agricultural land, contaminating water sources, and increasing health risks. This creates a feedback loop in which environmental harm



reduces community welfare and pushes more youth into ASM as one of the few viable livelihood options (Lydia et al., 2022; Teku, 2025).

The environmental consequences of ASM in the Democratic Republic of the Congo are substantial and multi-dimensional. Although individual operations are small in scale, their cumulative impact is significant, particularly in cobalt-rich regions such as Katanga and the Congo Basin. One of the most visible impacts is deforestation. Mining activities often trigger the development of surrounding settlements and farmland, leading to deforestation rates far exceeding the direct mining footprint. This has serious implications for the Congo Basin rainforest, a critical global carbon sink and biodiversity hotspot (Center for International Forestry Research [CIFOR], 2024).

Artisanal mining also contributes to soil degradation, water pollution, and habitat destruction. Toxic substances released during extraction processes contaminate waterways, soil, and air. Studies conducted in Kolwezi, a major artisanal cobalt mining hub, report elevated cobalt concentrations in residents' blood and urine, with children showing biomarkers of toxic exposure and oxidative DNA damage. These exposures pose long-term health risks, particularly for youth who live and work near mining sites (Banza et al., 2018).

The growth of informal mining settlements further strains local infrastructure and social services. Mining areas often develop into densely populated communities with informal markets and services but lack adequate sanitation, healthcare, and education facilities. This contributes to broader social challenges, including increased crime, substance abuse, and gender-based violence, disproportionately affecting young women and children. Environmental degradation therefore extends beyond ecological damage, undermining community wellbeing and creating additional barriers to healthy youth development (African Biodiversity Collaborative Group [ABCG], 2023).

Responses and Interventions

Addressing the complex challenges facing youth in artisanal and small-scale mining (ASM) requires a multifaceted approach that combines government policy, industry responsibility, and grassroots interventions. Efforts to formalize the ASM sector are central, aiming to regulate mining practices, improve working conditions, and eliminate child labour. The government of the Democratic Republic of the Congo, supported by international partners, has introduced initiatives to integrate artisanal miners into the formal economy through mining permits, training, and safer working practices. However, formalization continues to face significant obstacles, including entrenched informal networks, weak regulatory enforcement, and persistent economic pressures (IMPACT, 2022; Mongabay, 2024).

Non-governmental organizations and international agencies have also played an important role in supporting youth-focused initiatives. These include educational programs to keep children in school, alternative livelihood strategies to reduce dependence on mining, and vocational training to improve youth employability outside ASM. For example, programs in Katanga promote



apprenticeships, skills development, and decent work opportunities for young people as a means of breaking the poverty–mining cycle (Fair Cobalt Alliance, 2022; Pact, 2023).

Corporate accountability has become increasingly prominent, with multinational companies facing growing pressure to ensure responsible sourcing of cobalt and other minerals. Initiatives to improve traceability, strengthen due diligence, and promote ethical supply chains aim to reduce exploitation within ASM communities and indirectly benefit youth miners. Despite these advances, balancing economic realities with social responsibility remains challenging and requires sustained coordination among governments, civil society, and industry actors (Child Rights Business, 2025; Wilson Center, 2024; IIED, 2023).

Case Studies and Personal Stories

Personal narratives and localized case studies bring depth and a human dimension to understanding the impacts of artisanal mining on youth in the Democratic Republic of the Congo (DRC). One notable initiative is the “Children Out of Mining” program run by Pact, which provides youth apprenticeships as safer alternative livelihoods. Madeleine Bunda Kalenga, for example, began mining at age 12 in Kabala due to family poverty but later transitioned into tailoring through an apprenticeship, enabling her to operate a small business and avoid returning to mining. Similarly, François, who started working as a rock crusher at 13, completed computer science training and now owns a community shop, demonstrating how vocational education can transform youth futures (Pact, 2023).

In the eastern province of Haut-Uélé Province, child labour remains prevalent in artisanal gold mining sites such as Menze and Babarau. Poverty drives children to work long hours in hazardous and largely unregulated conditions that often escape state oversight due to the informal and remote nature of these mining areas. Community-based organizations, including IPIS Research and local partners such as RECOREN, have promoted responsible mining practices, improved health and safety standards, and advocated for education and child protection (IPIS Research, 2021).

The realities of cobalt mining at sites like Kamilombe in Lualaba Province are equally stark. Thousands of miners, including youth, face dangerous underground conditions for minimal returns, confronting hazards such as tunnel collapses and toxic exposure. Despite growing global demand for cobalt used in electric vehicles and electronics, many miners remain trapped in cycles of poverty and exploitation. Interviews with families highlight aspirations for education and safer livelihoods for their children, underscoring the gap between economic necessity and social mobility (The Conversation, 2023).

The impacts of ASM on youth in the DRC are therefore deeply paradoxical. While the sector provides crucial income for impoverished families and opportunities for economic participation, it simultaneously exposes young people to hazardous labour conditions, health risks, educational disruption, and social exploitation. These interconnected challenges perpetuate cycles of poverty and marginalization within mining communities.



Gender disparities further intensify vulnerability. Young women and girls often face discrimination, exclusion from higher-paying roles, and increased risk of violence. Environmental degradation associated with mining compounds these difficulties by undermining community health, agricultural livelihoods, and overall wellbeing. Although efforts to formalize and regulate ASM show promise, they must contend with entrenched informality and economic precarity.

Successful interventions increasingly combine education, alternative skills training, formalization of work, and community empowerment. These case studies illustrate the transformative potential of apprenticeship programs and vocational training, yet scaling such initiatives remains challenging. Holistic approaches that address both economic opportunities and youth protection are essential to breaking cycles of child labour and unsafe employment in ASM communities.

Conclusion

Artisanal and small-scale mining in the Democratic Republic of Congo plays a complex role in shaping youth livelihoods. While offering vital income and skills development, mining also exposes youth to significant socio-economic, health, and environmental risks. Policies and interventions must carefully balance these dynamics, fostering formalization, child protection, education access, and livelihood diversification. Empowering youth through apprenticeships and alternative employment pathways has proven effective, as highlighted by successful programs in the DRC. Continued commitment from government, NGOs, and industry actors is crucial to transform mining-dependent communities into sustainable environments where youth can thrive safely and with dignity. Future research should deepen analysis of gendered impacts and monitor the long-term effects of formalization and youth empowerment initiatives, contributing to informed policies that prioritize youth welfare alongside mineral development.

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