



Survival amidst Gold Mining and Conflict – A Report from Sudan

by Sara Omer Hamad Mohamed

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1. Gold and Armed Conflict in Sudan

Sudan is now the third-largest gold producer in Africa (McGregor, 2023). In 2022, more than 18 tons of gold were officially produced by the organized sector (Africanews, 2023). However, up to 80% of gold production is believed to be smuggled out of the country, with proceeds often used to fund the ongoing internal conflict (Africanews, 2023). Gold has become a source of financial independence for armed factions. Mohamed Hamdan Dagalo, known as Hemedti has relied on it to maintain a separate war chest, even as the Sudanese Armed Forces (SAF), led by al-Burhan, also control large parts of the economy (Blanco, 2023).

Three Sudanese entities have played key roles in funding the SAF and the Rapid Support Forces (RSF) (Miller, 2024):

- ZADNA International Co for Development Ltd, reportedly used by SAF to launder funds.
- Al-Fakher Advanced Works Co. Ltd., the RSF's holding company for gold exports.
- Al Khaleej Bank Company Ltd, facilitating RSF's financial operations.

Smuggled Sudanese gold eventually reaches international markets via a regional commercial hub in the Gulf. This illegitimate gold trade helped establish a relationship between the RSF and Wagner Group, with Sudanese gold serving as a funding source for Russian interests, including the war in Ukraine (ADF, 2024).

According to documents from an anti-corruption NGO, the RSF maintained a bank account in a Gulf capital to procure equipment such as modified technical vehicles. Much of this funding is channeled through Al-Junaid Gold Company, officially owned by relatives of Hemedti (McGregor, 2023). Al-Junaid has since expanded into multiple sectors, reinforcing the RSF's financial independence (McGregor, 2023).

Through gold smuggling, Hemedti has accumulated considerable wealth, established dozens of companies, and expanded his influence across borders. Some media and U.N. sources allege that this regional hub has also served as a conduit for propaganda, military logistics, and humanitarian cover shipments (ADF, 2024).

Reports from the U.N. suggest that 50 kilograms of gold were transferred to a Gulf-linked network in May 2023, shortly after conflict erupted between the SAF and RSF (ADF, 2024). The RSF then began

receiving shipments of weapons - including MANPADS - via Libya, allegedly facilitated by the Wagner Group and Libyan Field Marshal Khalifa Haftar, who has received backing from both the RSF and actors in the Gulf region (ADF, 2024).

These weapons have helped the RSF sustain a brutal campaign against the SAF. In cities like Khartoum and El Geneina in West Darfur, the death toll has reached alarming levels. In El Geneina alone, the U.N. now estimates as many as 15,000 civilians may have died since April 2023—a 25% increase from previous estimates (ADF, 2024). U.N. monitors have also reported credible allegations of logistical support to the RSF via Gulf-funded humanitarian infrastructure across the border in Chad (ADF, 2024).

2. Artisanal Gold Mining in the Context of Climate Crisis

Artisanal and small-scale gold mining (ASM) currently contributes around 85% of Sudan's total gold production (El Tohami, 2018).

Employment and Social Impact

- Roughly one million individuals are directly involved in artisanal gold mining.
- An additional four million depend on mining for their livelihoods, amounting to 14% of Sudan's population.
- Over 30 types of occupations are practiced within the small-scale gold mining and processing centers.

Demographic surveys indicate that about 93% of workers are under 45. Processing centers, or suq, offer numerous services, ranging from mining tools to basic healthcare and entertainment. Despite these activities, hygiene conditions remain poor, and occupational illnesses are common (El Tohami, 2018).

Health Hazards

Workers often rely on unsafe and insufficient water supplies, leading to waterborne diseases such as typhoid, dysentery, and cholera. Even those with access to treated water do not meet the WHO's minimum daily consumption requirements (get 40-50 liters per day per person) (El Tohami, 2018).

Environmental Impacts

- Deforestation and land degradation from mining operations.
- Water pollution from cyanide and mercury use.
- Sedimentation, acid drainage, and metal deposition damage aquatic ecosystems.
- Air and noise pollution are common near processing centers.

Vegetation loss from mining drastically alters ecosystems, displacing wildlife and disrupting local agriculture. ASM's impacts are deeply linked to Sudan's broader environmental vulnerabilities. Mining activities require acquisition of large tracts of land. Both deep and surface mining degrade the land surface since there is destruction of the entire forest. Consequently, land for farming and other agricultural purposes is lost, and aquatic life destroyed (El Tohami, 2018).

Climate Change Implications

Sudan, located in Northeast Africa, is no stranger to the impacts of the climate crisis. Rising temperatures, prolonged droughts, and erratic rainfall patterns have devastated communities and ecosystems.

Artisanal and small-scale gold mining can indeed have implications for climate change:

- Deforestation and land use change: Mining often leads to the removal of vegetation and alteration of land cover, reducing the land's natural ability to sequester carbon and increasing vulnerability to climate impacts.
- Mercury and tailings disposal: The use of mercury in artisanal gold mining contributes to environmental pollution and can have indirect implications for climate change by harming ecosystems and reducing their adaptive capacity.
- Impact on water bodies: Mining activities often disrupt the natural balance of rivers and streams, which can degrade ecosystems and make them more vulnerable to the effects of climate change.

3. Gendered Labor: Women in Sudan's Artisanal Mining Sector

The economic and political situation in addition to climate change intensifies the existing challenges faced by women involved in artisanal gold mining in Sudan. Women, particularly those aged between 13 and 35, engage in tasks such as pitting, rubble panning, and fetching water for domestic use. Older women often focus on digging and panning for gold. Their responsibilities also encompass manual rock crushing, grinding, panning, and amalgamation (Ibrahim, 2003).

For instance, Ingessana women transport water from shallow holes approximately 2 km away, carrying two 4-gallon containers balanced on their shoulders with the aid of a stick; the eight gallons of water sell for S.D. 50 (US \$0.20) (Ibrahim, 2003). Age groups in mining range from 10 to 60 years old, with the majority between 18 and 35. Working hours typically span 10 to 12 hours daily. Women, especially those in food services, cater to both male and female miners. Gender roles are distinctly defined: women often reside far from mining sites, sometimes bringing their children along, and usually occupy the lower end of the supply chain, reprocessing residual dirt left by men to extract gold using mercury (Elhag, 2024).

Despite their arduous labor, financial returns are minimal. After accounting for expenses related to dirt collection, transportation, grinding, mercury procurement, and payments to others involved, the gold yield may be as little as 1/10 of a gram. Worth approximately US \$1.25, leaving a net return of only US \$0.70 (Elhag, 2024). Exposure to mercury fumes during burning processes poses significant health risks. Moreover, women are typically barred from owning gold prospecting wells, which are usually held by male relatives, and instead collect stones and dirt from abandoned wells or their homes without paying taxes (Elhag, 2024).

These women lack formal recognition and protection as miners, leading to various health issues—including infections, respiratory problems, malaria, back pain, fatigue, vision, and dental problems—and fear of job loss deters them from voicing their hardships. They often experience hand swelling and malaria and may face harassment, including sexual harassment, which remains unreported due to cultural stigma.

4. Conclusion: Toward Just and Sustainable Solutions

Sudan's gold sector reveals a complex intersection of armed conflict, environmental degradation, and gendered labour exploitation. As warlords and external actors reap profits from illicit gold flows, millions of Sudanese - particularly women - bear the human cost. Urgent policy reform, environmental safeguards, and protections for vulnerable communities are essential to prevent further suffering and irreversible ecological damage.

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Sara Omer Hamad Mohamed studied "Natural resources management and ecological engineering" at the University of Natural Resources and Life Sciences, Vienna (BOKU) (Master of Science), focussing in the human dimension and socio-economic aspects of sustainable development.

Based on her previous studies of Geology/Earth Science, with a specialization in Petroleum Science, and a Master Study in Environmental Science, both at the University of Khartoum in Sudan, she started to engage in environment protection and awareness raising and feminist movement building in Sudan; last but not least based on her experiences as a "Mining Awareness Manager Assistant" at the Ministry of Minerals of Sudan in 2015. Between 2017-2020, she served as a Director General of the Sudanese Environmental Society (SES) at the Institute of Environmental Studies in Khartoum (Sudan). Previously, she worked as a University teaching assistant at the University of Khartoum, Geology Department.

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