

The Ban on Illegal Mining in Ghana: Environmental and Socio-Economic Effect on Local Communities

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Abstract

The study was conducted to assess the effects of small-scale (artisanal) gold mining and its social and economic implications on the people in Amansie West District of Ghana. The artisanal gold mining communities were studied using secondary data from scholarly articles and journals, books, conference papers, research reports, policy documents, working papers, and briefs. Descriptive and systematic analyses were conducted. The result indicated that youth aged between 21 - 30 were most likely to engage in illegal mining operations in the selected study areas. The study revealed that farmland had been destroyed, making farming difficult for the inhabitants. It is evident from the review that dug-out pits from mining serve as breeding grounds for mosquitoes and death traps for humans. The study, therefore, accentuates the need for illegal small-scale gold mining to be formalised and strategic interventions and policies proposed for the protection of Ghana's Natural resources. Furthermore, community members should be involved in policy-making and environmental protection issues to help control the menace of landscape destruction. Although the ban on illegal gold mining activity by the government has caused more people to lose their jobs leading to livelihood challenges in mining communities, it is a step in the right direction, as the ban seeks to halt and check the illegal small-scale mining sector. The study recommended alternative livelihood and income-generating projects such as beekeeping, mushroom culture, grasscutter rearing, and agroforestry technologies including the growth of economic fruit trees as alternative livelihood ventures.

Keywords

Small-Scale Gold Mining, Livelihood, Social and Economic Implications

1. Introduction

The key issue for Ghana today is how best to maximize and sustain the benefits of artisanal and small-scale gold mining and systematically reduce the negative effect associated with the exploitation of these minerals. Artisanal and small-scale gold mining has grown significantly in recent years and, if properly managed, could significantly reduce rural poverty and improve the standard of living of rural populations. Currently, artisanal and small-scale gold mining accounts for more than 60 percent of the total mining labour force in Ghana, employing more than 1 million people directly and indirectly. In 2013, artisanal small scale gold miners accounted for 34 percent of Ghana's total gold exports (Stemn, 2020). Overall, sustainable mining development is a globally driven process that promotes economic, social and environmental sustainability (Wireko-Gyebi et al., 2020). However, Stemn (2020) argues that small-scale mining has become an indispensable industry in all developing countries. In recent years, many small-scale mining activities have become increasingly worrisome and widespread, especially in the gold mining communities of Ghana. While these artisanal or small-scale mining activities employ millions of workers, they have serious environmental effect and lead to health risks, social costs, poverty and political tensions.

Ghana's mineral potential is embedded in rocks such as the Tarkwa and Birimian series, which cover more than 40 percent of Ghana's territory (Adu-Baffour et al., 2021). For many years, small-scale mining has played an important role in the Ghanaian economy (Stemn, 2020). Requiring little investment and minimal technical skills, small-scale gold mining is an attractive activity for a growing number of Ghanaians and is known to be practised in many communities, in common with other developing countries. Small-scale gold mining in Ghana was regarded as an informal industrial activity before the passage of the Small-Scale Mining Act (PNDCL 218) in 1989. PNDCL 218 provided the legal framework for the operation of small-scale mines. The passage of the Act has facilitated the development of small-scale mining, particularly the involvement of youth, women, and children in many related activities, which are largely crude, unsupervised, and uncontrolled in many parts of the country. Small-scale gold mining has contributed over US\$117 million to the Ghanaian economy since 1989 (Wireko-Gyebi et al., 2020). The geology of Ghana contains many natural minerals, especially gold, bauxite, diamonds, and manganese.

Small-scale gold mineral extraction contributes to poverty reduction because it creates jobs and income opportunities and supports local businesses that use raw materials from local and neighbouring towns. The income of the winners goes mainly to food, transport, education, and health care. While the winners enjoy all these benefits of life, the exploitation of this natural resource threatens the use of the environment for future generations (Adu-Baffour et al., 2021). Some of the major negative impacts and consequences of small-scale mining include land degradation, destruction of flora and fauna, unprecedented pollution of water bodies and destruction of farmlands. Small-scale miners operate near

major rivers and streams because they need water for their operations. These important water bodies provide drinking water for community members and animals. The predominant form of mineral extraction is strip mining, which alters the landscape and poses potential dangers and losses to workers and indigenous peoples. There have been reports of deaths of small-scale gold miners trapped in collapsed underground mines (Beylot et al., 2021). For more than a decade, the government of Ghana has been making adequate efforts and plans to address the environmental degradation caused by illegal small-scale gold mining, commonly known as galamsey in Ghana through banning. Though the ban on this activity by the government has caused more people to lose their jobs leading to livelihood challenges in mining communities, it is a step in the right direction, as the ban seeks to halt and check the illegal small-scale mining sector. The ban is further aimed at stopping forest destruction, environmental degradation, and contamination of water bodies. It is well known that illegal small-scale mining activities have dramatically polluted rivers, fouled the environment, and destroyed many farmlands within Ghana. The purpose of this review was to examine the effect of environmental and socio-economic issues of the ban on illegal mining activities on communities in the Amansie West District of Ghana. This will assist the Government and the District Assembly to make integrated interventions to help address the environmental problems caused by these activities, as a clean and pollution-free environment is one of the important determinants of quality of life.

2. Methodology

Much of the information was drawn from secondary data sources such as relevant published literature on the subject; scholarly peer-reviewed journals and articles, books, conference papers, research reports, policy documents, working papers, and briefs. The study subsequently conducted a desktop review of recent publications on galamsey menace in the country and this informed the selection of some affected illegal mining communities in the district (Figure 1).

3. Discussion

3.1. Drivers of Illegal Mining Activity in Ghana

There are many reasons why people engage in activities related to small-scale illegal mining, and most people believe that activities related to small-scale illegal mining are caused by poverty. According to the World Bank report and Mimba et al., (2023), small-scale mining is primarily a poverty-related activity, mostly occurring in the poorest and most remote rural areas of the country, with a highly mobile, poorly educated, and underemployed population engaged in the activity. Galamsey is often seen as a lucrative opportunity to alleviate the extreme poverty they are currently experiencing. Galamsey is therefore a labour-intensive, gender-sensitive activity carried out mainly by men, with little direct involvement by women.

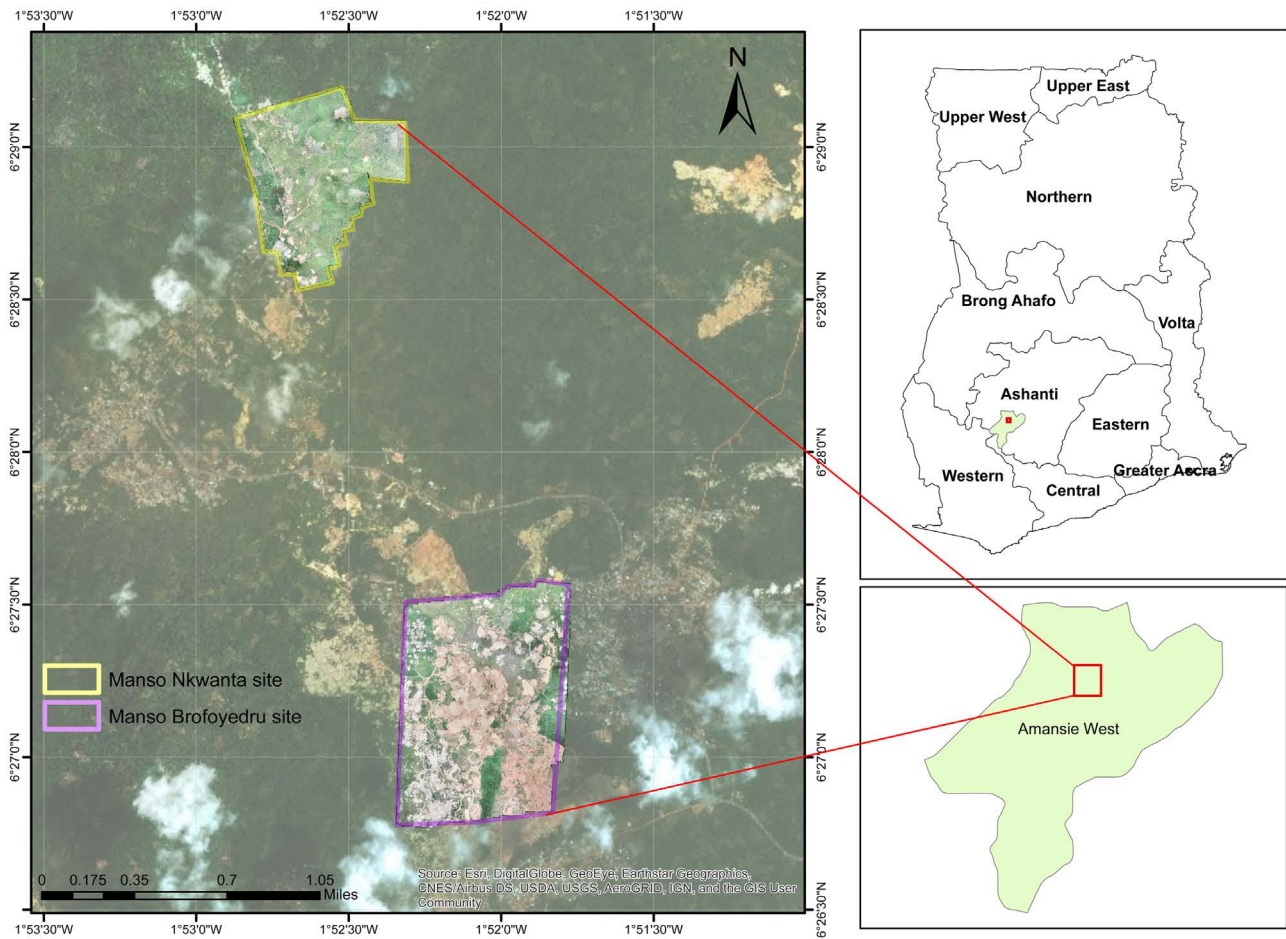


Figure 1. Map of the study area.

Throughout the history of almost all established cultures, gold has been a symbol of power, beauty, purity and success. The main uses of gold are in jewellery, electronics, financial security and healthcare. Of the gold consumed annually, about 78% is used in jewellery production (Wireko-Gyebi et al., 2020). The global demand for gold in these industries has led to high gold prices in the global market, making gold mining a lucrative business. As the average income of illegal miners can be higher than the national average, gold mining is often considered an attractive industry. The lack of human and financial resources of public authorities is a major challenge to the effective implementation of existing laws. Unlike large-scale concessions, licences for small-scale concessions are usually accompanied by a permit issued by the Environmental Protection Agency (EPA), which allows the licensee to carry out mining activities without any legal restrictions. Although a small number of small-scale miners have obtained operating licences that legitimise their activities, most small-scale miners operate illegally and unregulated. Unfortunately, oversight of their activities and monitoring of associated environmental risks is not effective enough. Another important factor is the issue of land ownership in Ghana. While all mineral resources are formally owned by the state, the continued influence of Ghanaian chiefs and elders over

land has effectively led to the emergence of two parallel mineral licensing regimes: one formal (granted by the state to large-scale and some small-scale mining companies), and the other informal (granted by chiefs, mainly to galamsey operators) (Ofosu et al., 2020). Land tenure in Ghana is still very complex as there has been competition between politicians and chiefs over mining areas since colonial times.

3.2. Effect of the Ban on Illegal Mining on Biodiversity and Agriculture

Biodiversity can be described as the variety of life forms of different plants, animals and microorganisms, the genes they contain and the ecosystems they form. Everyone recognizes the value of mineral resources, but the concept of biodiversity has been slow to catch on (Beylot et al., 2021). The activities of the mineral industry pose some major threats to biodiversity. Mineral extraction removes all biota from the area of activity, thereby halting associated ecosystem functions and processes. The interdependence between humans and biodiversity is most evident among some indigenous peoples, whose livelihoods are highly dependent on biodiversity, or whose cultures and histories are closely linked to natural environments and systems. Dependence on biodiversity is evident in African cultures and is critical for community members. At the macro level, balancing gases in the atmosphere through photosynthesis and carbon sequestration depends on biodiversity, and about 40 per cent of the global economy depends on biological products and processes. Biodiversity also provides a myriad of ecological services that sustain our living and natural environments, from providing clean water and drainage services to nutrient cycling and pollination. These ecosystem services include soil formation and maintenance of soil fertility. In recent years, our understanding of the value of biodiversity has increased, but so has our awareness of the major threats to biodiversity. Biodiversity pressures and associated losses are currently threatening the ecosystem services on which we depend, destroying most crops and affecting food production in extractive societies. Mining has the potential to affect biodiversity directly or indirectly throughout the life cycle of a project. Any activity that involves land clearing (e.g., road construction, drill testing, topsoil removal, or tailings pond construction) or direct discharges to water bodies (e.g., tailings deposition in rivers or tailings pond discharges) or the air (e.g., dust or smelter emissions) is likely to have a direct or major impact of mining. Direct impacts are usually easy to detect. Indirect or secondary impacts may be the result of social or environmental changes caused by mining activities and are often more difficult to detect immediately. Cumulative impacts occur when mining projects are developed in environments that depend on biodiversity for their livelihoods. The impacts of illegal small-scale mining on biodiversity are significant, as mercury-containing chemicals are released into the aquatic environment, dramatically altering the pH of the water, poisoning aquatic species and leading to an overall decline in flora and fauna. Water can potentially transfer any chemicals used in mining a great distance

from the mine itself. Some of these chemicals may remain in the ecosystem long after the mine has closed. These same chemicals will affect the surrounding soils. Changes in the soil can lead to changes in the surrounding flora and the disappearance of some local plant species. Therefore, banning illegal and irresponsible mining will ultimately lead to ecosystem restoration and the return of lost plant and animal species. A 2017 Afrobarometer report shows that previously polluted rivers and other water bodies are gradually being cleaned up. Ecosystem services that have so far been altered by the activities of local communities, such as access to clean water, crabs, perch and non-timber forest products, are likely to be restored (Ofosu et al., 2020).

3.2.1. Effect of the Ban on Local Community Livelihood

The Government of Ghana remains determined to combat illegal mining, which is at odds with claims by illegal miners that they have nothing to do if they are forced to stop mining. Those who engage in illegal mining do so to make a quick buck, not necessarily because there is no work. Mining is a source of income for many, but we should share the responsibility of ensuring that mining activities do not affect our country and deprive future generations of a safe and livable environment (Baffour-Kyei et al., 2021). It is difficult for the average Ghanaian to understand that the country has benefited immensely from the mining industry, probably because the communities in which the mining takes place are still largely underdeveloped, and there is no evidence to suggest that these communities are a source of wealth for many people and places. For many years, Obuasi in Ghana was the richest gold mine in the world, but now the town is left with nothing. Since the ban on illegal mining (galamsey), the Amansie West area, which is mainly engaged in small-scale gold mining, has been struggling to survive. Companies that thrived during the peak mining season have had to close or are in danger of doing so. In Brofoyedru and Manso Nkwanta, mining is almost the only sector in which the local economy thrives. Life in the communities of the region remains vibrant. The ban on small-scale mining affects the use of resources by communities that still base their local economies on small-scale mining. Men who benefit directly or indirectly from illegal mining activities are similarly affected. In mining communities across the country, many employers in the gold mining value chain have laid off workers. These unemployed youths are now a burden on their families and society. Some traditional authorities have also expressed concern about the economic challenges their communities and youths are now facing because of the ban. While expressing support for the government's bold decision, they urged the government to immediately provide alternative livelihoods for members of the affected communities and revitalize businesses in the affected communities.

Many local leaders are reportedly under pressure from youth in their communities to provide alternative sources of income to the people as soon as possible. In the eastern region of the western region, cocoa cultivation and mineral extraction are the backbone of the local economy. However, owing to restric-

tions on mining activities, some leaders have decided to establish cocoa processing plants through the One District One Factory (ODOF) programme to revive business activities in their communities.

3.2.2. Health and Safety Effect

Based on the documents reviewed, most small-scale gold miners were forced to consume alcohol, work in the water without protective equipment, and smoke cigarettes and marijuana because they could no longer work in the mines after the ban was implemented. The study found an association between the use of alcohol, cigarettes, and marijuana by small-scale gold miners after the implementation of the ban, but no causal relationship was found. According to [Vajargah & Azar, \(2023\)](#), smoking exacerbates the effects of dust on the lungs, making them more susceptible to diseases such as silicosis, tuberculosis, and pneumonia. In addition, alcohol abuse is also a major cause of mining accidents. Studies have found that the use of these substances is predominantly among young people between the ages of 18 and 35.

3.2.3. Land Use Effect

The findings of the review indicate that most of the farmers' land has been damaged and soil fertility has declined, resulting in low yields. Most of the farmland was covered by trenches and soil erosion was very high, and most of the farmland was gravelly and unsuitable for cultivation. Vegetation has also been cleared and destroyed. All this has resulted in most farmers being unemployed and earning meagre incomes to support their families. Small-scale gold miners, when they dig up land for mining activities, emit particulate matter which eventually pollutes the environment. Their activities remove vegetation and topsoil, leading to soil erosion and environmental degradation. Soil consolidation caused by heavy machinery destroys topsoil and affects the ecology of beneficial microorganisms that are important in maintaining soil fertility. As reported by [Baffour-Kyei et al., \(2021\)](#), small-scale strip mining has resulted in the degradation of large tracts of land, posing a serious threat to communal agriculture and its economic survival. Furthermore, studies conducted by [Wireko-Gyebi et al., \(2020\)](#) showed that land degradation caused by illegal mining activities reduces biodiversity, thereby reducing the availability of medicinal plants in the environment. According to the World Bank report and [Mimba et al., \(2023\)](#), one of the environmental problems is land degradation.

3.3. Access to Farm Land

Access to farmlands in the face of increased economic demand for land for gold mining is a major socio-economic issue in the study communities. Agriculture is the backbone for the attainment of the sustainable development goal (SDG 1) and (SDG 2) and the lack of critical land resources for the rural poor to produce food and create jobs through agriculture will affect food security and undermine the SDG 3 in relation to premature mortality from hunger. The rural poor must

have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs, zero hunger and food preferences for an active and healthy life (Adu-Baffour et al., 2021).

Effects of Dug Pit due to Mining on the Communities

Inspections have found that pits dug by miners have become breeding grounds and deadly traps for mosquitoes. Studies have found that excavated pits are closely associated with mosquito breeding and can have a serious impact on the spread of disease in the area, especially for pregnant women and children under five years of age living near mining areas. Small-scale gold mining also affects plant biodiversity by destroying medicinal plants used in the mining areas to treat a variety of ailments such as anaemia, asthma, gonorrhoea, measles, and typhoid fever. Mining activities also deplete local natural resources that are used to treat the health problems of the population in and around the western region (Dabone et al., 2023).

4. Policies and Policy Gaps

In 1986, the mining sector underwent extensive reforms under the macroeconomic policy reforms of the Economic Recovery Programme (ERP) launched in 1983. These reforms were mainly targeted at sectors that could generate export earnings, such as mining. One of the overall objectives of the ERP was to create a framework of incentives to promote growth, encourage savings and investment, and strengthen the balance of payments. The World Bank's policy recommendations for the restructuring of key export sectors (especially mining) under the GSP include the need for a coordinated programme to rehabilitate State-owned mines, granting full managerial autonomy and gradually divesting these mines to private investors, along with financial assistance to reverse the decline in production. The mining sector, which is a potentially important contributor to foreign exchange aggregates, has been given priority attention to ensure increased production and productivity. Two types of policy measures can have a positive impact on the mining sector, namely macroeconomic policy reforms and sector-specific policy reforms (Hilson et al., 2022). Sector-specific policy reforms in the mining sector include changing the mining sector legislation to make the sector attractive.

5. Conclusion

Small-scale mining has severe environmental degradation and threatens the achievement of sustainable development goal 1, 2, 3, 6 and 13 which reflect on poverty, hunger, health and well-being, clean water and sanitation, and climate change respectively. The World Bank (2021) confirms this by stating that one of the environmental impacts of small-scale gold mining in Ghana is land degradation, especially extensive deforestation. In the selected study communities, youth are actively engaged in small-scale mining rather than agriculture. A largest number of people involved in illegal mining activities are young people between

the ages of 18 and 30. The influx of migrant workers has led to an increase in the cost of living (especially food prices and housing rents), displacement of communities and erosion of cultural values. This uncontrolled activity has rendered much of the agricultural land unavailable for cultivation. Polluted rivers and some dams have become death traps for people and animals and breeding grounds for mosquitoes. The Sustainable Development Goals framework lists 17 goals that countries around the world want to achieve by 2030. Goals 6, 11 and 13, for example, focus on clean water and sanitation, sustainable cities and communities, and climate action, respectively, but these will not be achieved if illegal small-scale mining is allowed.

6. Recommendation

The study recommended alternative livelihood and income-generating projects such as beekeeping, mushroom culture, grasscutter rearing, and Agroforestry technologies including the growth of economic fruit trees and species such as teak plantations should be encouraged among the youth and the entire affected communities to address their livelihood situation. The government should also come out with comprehensive guidelines for safe mining and review the licensing regime and proper monitoring regime. With this view, the government intends to use drone technology and tracking monitoring devices to monitor illegal mining activities, which I think is a step in the right direction.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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