



## Galamsey as an Asset and a Menace in the Ghanaian Space Economy

Christian Kofi Sarpong<sup>1a</sup> & Romanus Dokgubong Dinye<sup>1\*b</sup>

<sup>1</sup>Centre for Settlement Studies, Faculty of Built Environment, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

*\*Corresponding author: Romanus Dokgubong Dinye*

### Abstract

Illegal small-scale mining, popularly referred to as galamsey, is a long-standing issue in Ghana, impacting its economy and environment. While it provides livelihood opportunities, it threatens sustainable land use, environmental health, and socio-economic stability. The complexity of this activity has created debate regarding its value as an economic asset and threat. While it provides employment and contributes to local economic activity, it also leads to severe environmental degradation, loss of agricultural land, and socio-economic instability. This paper examines the dual role of galamsey as an asset and a menace in Ghana's economy. The paper adopted a systematic review approach to examine the impact of galamsey on land use, governance, and livelihoods. The study concludes that the social and environmental costs of galamsey are higher than its economic benefits. The need arises for strict policies, sustainable land use planning, and community action to arrest these impacts. By providing a balanced perspective on galamsey's role in Ghana, this paper contributes to discussions on resource governance, environmental sustainability, and economic resilience in developing economies.

### Keywords

Galamsey, Asset, Menace, Ghana

**Suggested citation:** Sarpong, C. K., & Dinye, R. D. (2025). Galamsey as an asset and a menace in the Ghanaian space economy. *Journal of Modern Social Sciences*, 2(4), 245–256. <https://doi.org/10.71113/JMSS.v2i4.253>

### Introduction

Owusu (2021) discussed that the space economy was an activity that had an impact on land use, natural resources, and development. The principal sectors are agriculture, mining, real estate, and infrastructure, affecting the nation's economy. Mining, especially artisanal and small-scale gold mining (ASM) or "galamsey," is a curse and a blessing in the economies of mineral-producing countries. It has a significant impact on the world mining sector, especially in the developing world. The sector supports over 40 million livelihoods, and some 150 million people indirectly depend on it (Intergovernmental Forum on Mining, 2018). ASM, as economically significant as it is, has negative effects on the environment, health, and the socio-economy (Hilson, 2002). Trade-offs between the economic benefits of mining and its downsides are a fundamental policy dilemma, especially in governance-scarce, resource-rich areas (Hilson, 2002).

Sub-Saharan Africa has extensive artisanal mining, especially in gold-endowed countries like Ghana, Mali, and the Democratic Republic of Congo (Bryceson & Geenen, 2016). ASM activates local economies, supplementing farm

incomes and offering rural livelihoods. Poor governance and informal activities have caused severe environmental issues like deforestation, water contamination, and land degradation (Hirons, 2020). Conflicts between small-scale and large-scale miners cause challenges in regulating the industry (Hilson & Maconachie, 2020).

The mining industry is vital to Ghana's economy, generating more revenue than foreign aid (World Gold Council, 2015). It provides jobs for both local and migrant workers in mineral-producing areas and comprises two substantial sectors: large-scale gold mining (LSM) and small-scale gold mining (SSM). Ghana's ASM has a history of close to 1000 years and is more established relative to most of the neighboring nations. Traditionally, people started ASM in search of gold nuggets to 'collect' and 'sell,' which is presently termed as "galamsey." In the last two decades, ASM has thrived as a rural economic activity in Ghana. Boom, as observed in literature, is propelled by the increase in gold prices, and ASM has also provided jobs for thousands left jobless by the 80s economic recovery plans (Hilson & Hilson, 2015). People opt for ASM in a bid to compete with multinationals to claim minerals and land.

Multistep registration and licensing in formal small-scale mining have driven ASM growth. Bureaucratic delays anger operators (Hilson, 2009). SSM and ASM are equivalent and thus used interchangeably. Gold mining has recently seen a significant boom (Reuters, 2024).

This unregulated mining industry has offered economic prospects to numerous people while creating severe environmental, health, and economic issues. In spite of its livelihood contribution, galamsey not only to the present but also extends the mechanism to long-term consequences, raising issues regarding sustainable development in Ghana. This paper examines (i) the impacts of galamsey on the space economy of Ghana; (ii) its social and environmental implications; and (iii) sustainable strategies to formalize small-scale mining.

## Overview of Literature

Ghana's mining sector is critical to economic growth, contributing to GDP, exports, and government revenue. It creates direct jobs in mining and indirect jobs in transport, construction, and manufacturing (Sarpong & Dinye, 2025). Responsible mining, environmental sustainability, and corporate social responsibility are promoted by the government through policy. These initiatives aim at fair distribution of revenue, reduced environmental impact, and social good to host communities.

Although it has economic benefits, mining has also generated environmental and social problems. They include deforestation, land degradation, water pollution, and air pollution, which result in respiratory diseases. Mining has also led to the displacement of individuals, loss of livelihood, and social tensions. A scan of scholarly literature identifies the outstanding themes of employment creation, government revenue management, economic development, environmental degradation, and stakeholder involvement, and underscores the need for a balanced approach to resource exploitation.

### *Galamsey as an Asset*

**Employment Generation:** Ghana's mining industry has created employment, not only affecting miners but also auxiliary workers. This affects transport, building, manufacturing, and other linked industries. Mining employs mine workers, engineers, geologists, and technicians. It creates jobs for skilled and semi-skilled workers, generating income. Demand for goods in mining communities has boosted local businesses, providing more jobs (Ghana Chamber of Mines, 2020). Indirect employment takes place through the demand for mining goods and services. Transport services facilitate the movement of equipment, supplies, and labor to mining operations. Construction firms construct infrastructure to support mining. The manufacturing industry supports the mining industry by producing essential machinery and equipment, generating indirect jobs in the economy (World Bank, 2020). Mining

plays a significant part in poverty alleviation and livelihood improvement, especially among the mining communities.

Employment in the industry secures regular incomes for individuals, enabling them to meet basic needs and access services, improving living standards. This raised living standards and reduced poverty in these areas (Ghana Chamber of Mines, 2020). Long-term job creation in mining requires ongoing investment, capacity building, and economic diversification. Deepening connections between mining and other sectors is required to increase jobs in non-mining sectors. This strategy would build a stronger, fairer economy that works for more individuals and communities.

### *Government Revenue and Fiscal Management:*

Ghana's mining sector is vital to government income, enhancing fiscal capability and funding development programs. The government obtains revenue from mining by way of corporate income tax, withholding tax, VAT, and royalties on mineral production value, which plays a major role in budgetary allocation (Ghana Extractive Industries Transparency Initiative, 2021). Mining receipts have financed infrastructure development such as telecommunications, energy, and roads, enhancing mining activities and upgrading economic activity and standards of living (World Bank, 2020). Mining revenues finance education, health, and welfare through school and hospital construction, scholarships, and support to vulnerable groups. Nonetheless, fiscal responsibility, openness, and revenue distribution continue to pose problems. Revenue leakages must be addressed and accountability ensured to maximize benefits and minimize illicit financial flows (Ghana Extractive Industries Transparency Initiative, 2021).

### *Contribution to GDP and foreign exchange earnings:*

The mining sector considerably contributes to the country's GDP via foreign exchange, investment, and linkages to other industries. Mining revenues finance infrastructure and social services, which are crucial for economic development and societal advancement. These investments have built transport infrastructure, schools, hospitals, and utilities (World Bank, 2020; Aryee, 2001). The mining sector has spearheaded the economic diversification and industrialization of Ghana.

The industry has initiated growth in manufacturing, construction, and transport. The reliance on these other sectors has created jobs and spurred the economy (Aryee, 2001). Mineral exportation has also increased Ghana's foreign exchange income. The foreign exchange inflow finances the nation's place in foreign trade, consolidates its balance of payments, and allocates resources to the acquisition of goods and services that are essential to economic activities of various kinds (World Bank, 2020). In addition, the mining sector has stimulated innovation and technological development in the economy of Ghana. Mining involves the use of sophisticated equipment and

skills, which promotes the creation of new technology. The transfer of technology increases productivity and competitiveness in other industries (Aryee, 2001). Economic value of mining relies on factors like commodity prices volatility, regulatory environment, and environmental management. Its monetary contribution requires careful observation and proper practices to sustain Ghana's economy and citizens.

### *Galamsey is a menace*

**Deforestation and land degradation:** Deforestation is a common concern associated with mining operations. Forest areas are often cleared to make way for mining activities, resulting in the loss of biodiversity and ecological habitats. This loss of forests can have far-reaching environmental consequences, including the disruption of ecosystems, increased carbon emissions, and reduced resilience to climate change. It is important to enforce strict regulations and implement reforestation programs to mitigate the impacts of deforestation caused by mining (Ghana Environmental Protection Agency, 2019).

**Water pollution and contamination:** Water pollution is another significant environmental challenge linked to mining activities. The use of chemicals and heavy machinery in mining operations can lead to the contamination of water sources, including rivers and groundwater. This pollution can have detrimental effects on aquatic life, ecosystems, and communities that rely on these water sources for drinking water and irrigation. Implementing robust water management practices, such as proper containment of mine tailings and wastewater treatment, is essential to minimize water pollution (World Bank, 2020).

**Respiratory diseases and lung conditions:** Galamsey activities subject miners to noxious fumes and dust, which is detrimental to respiratory health. Silica dust from rocks with gold content could lead to silicosis, a long-term lung disease (Fortin et al., 2010). Poor living conditions and dust exposure heighten susceptibility to respiratory infections, especially where health care is inadequate. Silicosis is an acute respiratory disease for galamsey miners caused by the inhalation of fine silica dust from gold mineral rocks (Banunle et al., 2018). Miners who break and grind ores are more exposed to silica dust, leading to inflammation and scarring of the lungs (Wiafe et al., 2022). Silicosis leads to permanent lung injury, lowering elasticity and function (Sebiawu et al., 2020). Its symptoms are chronic cough, shortness of breath, chest pain, and, in extreme cases, respiratory failure. It also compromises the immune system, exposing miners to TB co-infection (Afriyie et al., 2023; Esdaile & Chalker, 2018). The living conditions in galamsey areas are deplorable, and exposure to pollution and dust is constant, putting miners at high risk of contracting respiratory infections.

These infections have many challenges (Esdaile & Chalker, 2018). Galamsey workers live in crowded, unsanitary

conditions conducive to respiratory pathogen transmission (Esdaile & Chalker, 2018). The workers in wet, poorly ventilated tunnels inhale fungi and bacteria capable of causing lung infection, particularly in the presence of pre-existing lung damage from silicosis. Healthcare access in rural galamsey areas is generally inadequate, worsening respiratory infections and complicating treatment (Yen et al., 2012).

**Loss of livelihoods:** Illegal mining activities, known as galamsey, have resulted in the displacement of farmers and the destruction of cocoa farms, which are Ghana's most important cash crop. This has led to a decline in food crop production, posing a threat to food security. The depletion of forests due to mining has dramatically reduced the harvesting of non-timber forest products such as snails, honey, and firewood (Gilbert & Albert, 2016). Cocoa is a crucial source of income and a significant contributor to Ghana's economy, generating a substantial portion of its export revenue. However, galamsey has displaced cocoa farmers in many regions (Yen et al., 2012). The unregulated mining activities often result in the degradation of fertile farmland, rendering it unsuitable for cocoa cultivation. This further exacerbates the loss of livelihoods for cocoa farmers (Donkor et al., 2023). Displaced farmers not only experience a significant reduction in income but also face economic instability as they are compelled to seek alternative means of livelihood (Mensah & Darku, 2021).

Galamsey impacts cocoa production and disrupts the cultivation of food crops such as cassava, plantains, and yams. Mining activities pollute water bodies and contaminate the soil, leading to reduced crop yields and poor crop quality (Bessah et al., 2021). As food crop production declines, Ghana's food security is compromised. This poses a risk to the country's ability to adequately feed its population, potentially resulting in food shortages, higher prices, and increased food insecurity for vulnerable communities (Owusu-Nimo et al., 2018). Galamsey contributes to widespread deforestation and the destruction of habitats, causing a significant decline in the availability of non-timber forest products (Rajaei et al., 2015). Local communities that traditionally depend on resources such as snails, honey, and firewood for income and sustenance are adversely affected. The scarcity of these resources limits their options for making a living. The loss of forest resources erodes the traditional ecological knowledge of communities that have relied on these resources for generations (Akyeampong & Xu, 2023).

**Soil erosion and degradation:** Soil degradation is a concern in mining areas due to the removal of topsoil and the disturbance of soil structures. Mining activities can result in soil erosion, loss of fertility, and reduced agricultural productivity in affected regions. It is vital to implement land reclamation and rehabilitation programs to restore mined areas and promote sustainable land use practices. Engaging local communities in sustainable agriculture and land

management initiatives can help mitigate the impacts of soil degradation (Ghana Environmental Protection Agency, 2019).

**Displacement and Resettlement Issues:** Displacement and resettlement issues are significant challenges associated with mining activities. The acquisition of land and subsequent displacement of local communities can have profound social and economic consequences (World Bank, 2011). Resettlement programs aim to mitigate these impacts by providing alternative housing, livelihood options, and essential services (IFC, 2015). However, the effectiveness and adequacy of such programs vary, and ensuring the rights and well-being of affected communities remain important considerations (Cernea & McDowell, 2000).

**Social Conflicts and Stakeholder Engagement:** Mining operations often give rise to social conflicts among different stakeholders. Competing interests, land rights disputes, and environmental concerns contribute to conflicts that can hinder sustainable development (Hilson, 2012). Effective stakeholder engagement is crucial to managing and mitigating social conflicts. Engaging all relevant stakeholders, including affected communities, local authorities, NGOs, and mining companies, fosters dialogue and cooperation (Lacey & Rawlinson, 2011). Meaningful engagement ensures that diverse perspectives are considered in decision-making processes (Boutilier & Thomson, 2011).

## Methodology

This paper aimed to examine galamsey as an asset and threat within the Ghanaian space economy through a review of the literature. The paper sought to examine the economic, social, and environmental impacts of the mining activity and make recommendations for policymakers, stakeholders, and researchers. The current research adopted the systematic literature review method in seeking and analyzing the relevant studies published in peer-reviewed journals, books, reports, and other credible sources. The review was conducted using a systematic and stringent process in an attempt to traverse extensive and multifaceted literature on the subject. Literature searching was performed against electronic databases including PubMed, Scopus, Web of Science, and Google Scholar.

The keywords used were variations on the words "mining," "Ghana," "economy," and "impact of galamsey." The search was conducted only for English-language publications and was restricted to literature that had been published from 2000 to 2025 to reflect current circumstances. Studies chosen for inclusion were based on relevance to the research aim as well as quality. Peer-reviewed articles, books, and reports that had empirical data, theoretical frameworks, or analytical discussions on the impact of mining on the Ghanaian economy were utilized. Irrelevant studies, opinion pieces, and duplications were excluded. Relevant information from the selected studies was extracted,

including principal findings, research design, and theoretical frameworks utilized. The data were synthesized thematically to identify emergent themes, patterns, and trends in the literature.

The analysis comprised categorizing the findings under themes and subthemes concerning economic growth, employment, revenue for the government, environmental sustainability, social implications, and the negative impacts of galamsey. The implications of the literature reviewed were analyzed and interpreted to understand holistically the effects of galamsey in the Ghanaian space economy. The synthesis included the development of emergent themes, determining the strengths and weaknesses of the literature, and making connections between the various studies to develop pertinent conclusions. The review's limitations were determined, including possible publication bias, weaknesses inherent in the studies chosen, and the extent of the literature search. The weaknesses were taken into account in the interpretation of the results. The paper concluded by recapitulating the principal findings from the literature reviewed, distilling the most prominent findings and implications for the effects of galamsey on the Ghanaian space economy. The reference list was given in the appropriate citation format to recognize the authors of the literature reviewed.

## Contextual Focus on Ghana

Ghana lies between latitudes 4° and 11° north of the equator, on the west coast of Africa. It has an area of 238,535 square kilometers, about the same size as the British Isles or the State of Oregon in the USA (Aryee, 2001). Ghana has a vast array of mineral resources that contribute to its national economy, as shown in Figure 1. The most significant minerals produced include gold, bauxite, manganese, oil, and diamonds (Africa, 2024).

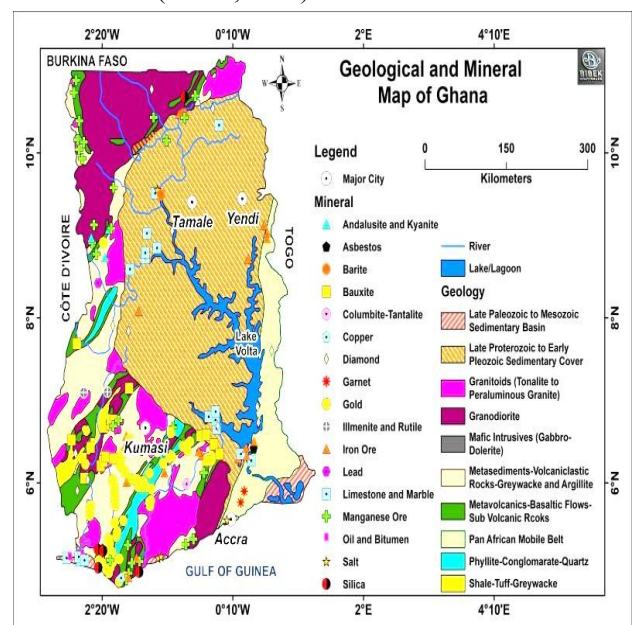


Figure 1: Geological and Mining Map of Ghana  
Source: Bibek (2025)

The mineral wealth of Ghana is of major importance to economic development. Bauxite, a key metal in aluminum production, generates revenue and jobs. The government wants to create an integrated alumina industry to attain optimal bauxite value (Ghana Chamber of Mines, 2021). Ghana also leads in manganese production, earning foreign exchange and employment, mostly in the west and north. Diamond mining is less significant than gold but contributes to West and East exports (Yeboah & Nyarkoh, 2022). Iron ore, limestone, salt, and granite are other minerals that aid construction and production. The oil and gas sector, specifically the Jubilee Field, was discovered in 2007, is a key revenue generator, drawing foreign investment and enhancing logistics and services. Limestone facilitates the production of cement and buildings, giving rise to employment. Coastal salt mining raises revenues and foreign exchange, which are vital for food processing and chemicals. These minerals drive economic diversification and infrastructure development, boosting Ghana's profile as a resource-rich nation (Yeboah & Nyarkoh, 2022). Gold production remains a major economic impetus in

Ghana, earning foreign exchange, employment, and government income in the form of royalties and taxes. Gold deposits occur primarily in the southwest, central, and northern regions. Historically, gold mining activities have been extensive in areas such as Tarkwa, Obuasi, Bibiani, and Prestea in the Western Region, as well as Dunkwa and Konongo in the Ashanti Region. These locations, designated as major gold mines in Figure 2, have been integral to the country's mining history (Gbireh, 2009). Figure 2 delineates current gold-rich areas within Ghana, encompassing substantial portions of the Western, Ashanti, and Eastern Regions. The Western Region, which includes mining towns such as Tarkwa and Prestea, has served as a focal point for both large-scale and small-scale mining activities. Similarly, Obuasi in the Ashanti Region, renowned for its extensive underground mines, has historically been one of Africa's most prominent gold-producing locations. The Eastern Region, particularly the areas of Kibi and Koforidua, has also contributed to gold extraction, albeit on a smaller scale. Figure 3 shows artisanal gold mining areas in Ghana.

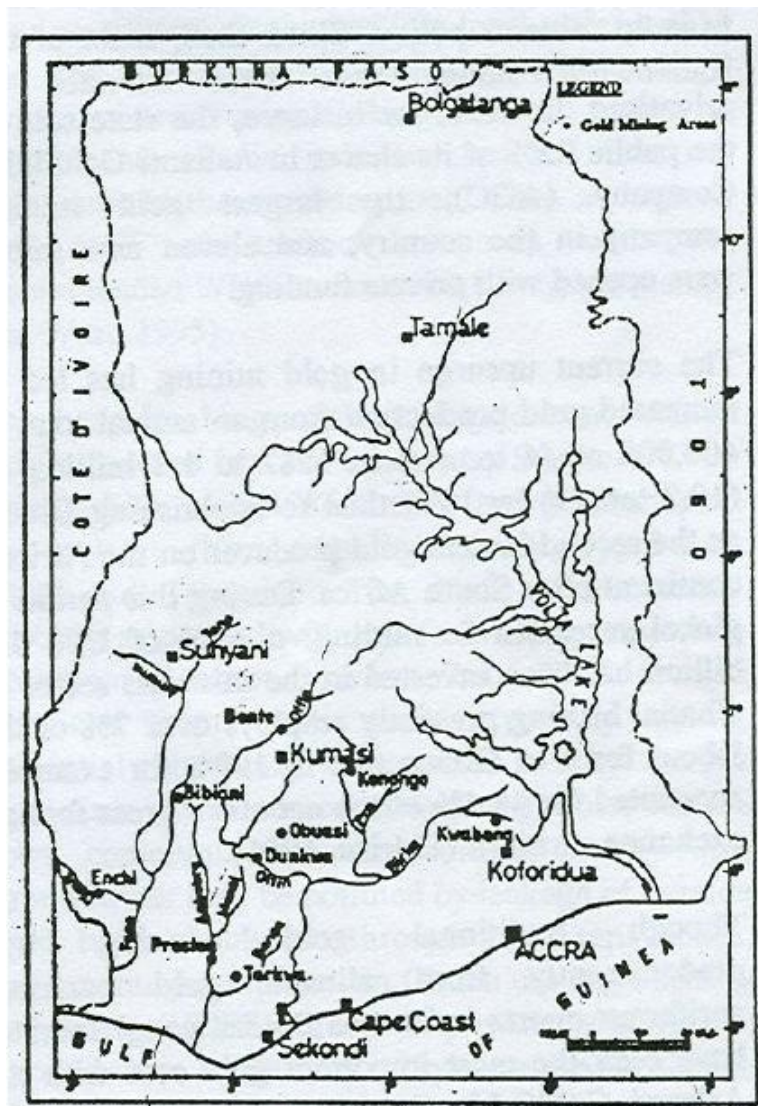


Figure 2: Map of Ghana showing the location of the major gold mines

Source: Gbireh (2009)

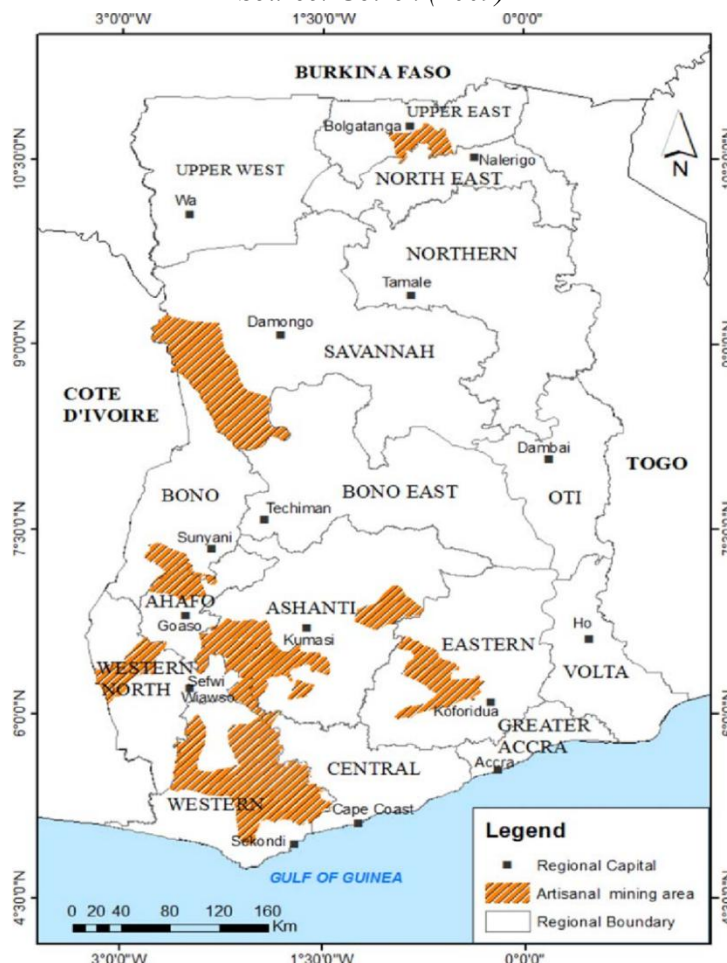


Figure 3: Artisanal gold mining areas in Ghana

Source: Takyi (2021)

### Analysis and Discussion

From the rigorous search and appraisal, the scholarly articles found to be directly relevant to Galamsey as an asset and menace in the Ghanaian space economy are those summarized in Table 1. These studies form the empirical,

theoretical, and conceptual foundation for the analysis and discussion that follow. With all this, they provide a contextualized understanding of the positive and adverse impacts of galamsey.

Table 1: Relevant Literature

Author	Publication Year	Objectives	Methodology	Key Findings	Relevance
<b>Galamsey as an Asset</b>					
<b>Theme 1: Employment Generation</b>					
Ghana Chamber of Mines	2020	Assess the role of mining in employment creation	Literature review and data analysis	Mining generates direct and indirect employment, benefiting transport, construction, and manufacturing sectors.	Highlights mining's role in poverty reduction and economic stability
World Bank	2020	Evaluate mining's role in job creation	Data analysis and policy review	Mining provides indirect employment through	Enhances local economies and

				supply chains and service industries.	supports sustainable livelihoods
<b>Theme 2: Government Revenue and Fiscal Management</b>					
Ghana Extractive Industries Transparency Initiative	2021	Examine the fiscal contributions of mining	Policy analysis and revenue tracking	Taxes, royalties, and dividends from mining contribute significantly to government revenue.	Supports infrastructure development, social welfare, and fiscal stability
World Bank	2020	Assess mining's contribution to national revenue	Statistical review and economic impact analysis	Mining revenue plays a crucial role in economic development and public services.	Ensures long-term financial stability for the government
<b>Theme 3: Contribution to GDP and foreign exchange earnings</b>					
World Bank	2020	Evaluate mining's economic impact	Statistical analysis of mining revenue and GDP contribution	Mining is a major foreign exchange earner and supports industrialization	Essential for economic diversification and sustainable development
Aryee	2001	Investigate mining's role in economic growth	Literature review and historical analysis	Mining promotes industrial expansion and international trade	Strengthens Ghana's economic resilience and growth potential
<b>Galamsey as a Menace</b>					
<b>Theme 1: Deforestation and land degradation</b>					
Ghana Environmental Protection Agency	2019	Assess the environmental impact of mining	Field surveys and environmental assessments	Deforestation and biodiversity loss are severe in galamsey areas	Urgent need for reforestation programs
<b>Theme 2: Water pollution and contamination</b>					
World Bank	2020	Investigate water contamination due to mining	Case studies and water quality tests	Chemical pollutants from mining affect water sources, harming ecosystems and communities.	Calls for improved waste management and regulation
<b>Theme 3: Respiratory diseases and lung conditions</b>					
Fortin et al.	2010	Study health risks in mining communities	Medical examinations and epidemiological studies	Exposure to silica dust causes silicosis and respiratory infections	Necessitates improved occupational health policies
Banunle et al.	2018	Assess the impact of mining dust on health	Field study and medical assessments	High prevalence of respiratory diseases among miners	Calls for stricter occupational safety regulations
Wiafe et al.	2022	Investigate the effect of air pollution from mining	Environmental impact assessments	Airborne particles contribute to chronic lung diseases	Supports stronger environmental health policies
Sebiawu et al.	2020	Study occupational hazards in mining	Surveys and workplace health assessments	High levels of lung infections in miners	Encourages improved health and safety standards
Afriyie et al.	2023	Examine the health effects of heavy metal	Toxicology studies and health	Mercury and cyanide exposure lead to severe	Necessitates intervention for

		exposure	screenings	health complications	miners' health protection
Esdaile & Chalker	2018	Investigate the impact of toxic mining practices	Chemical analysis and policy review	Unsafe mining methods increase respiratory illnesses	Highlights the need for improved regulatory enforcement
<b>Theme 4: Loss of livelihoods</b>					
Gilbert & Albert	2016	Examine the impact of galamsey on agriculture	Surveys and economic impact analysis	Cocoa farmers are displaced, reducing food security	Galamsey threatens traditional livelihoods
Yen et al.	2012	Assess the socioeconomic effects of illegal mining	Field research and interviews	Loss of farming land affects rural incomes	Calls for alternative livelihood programs
Donkor et al.	2023	Study the impact of galamsey on food production	Economic impact assessments	Soil contamination reduces agricultural yields	Urges policy interventions to restore farmlands
Mensah & Darku	2021	Investigate displacement effects on farmers	Case studies and household surveys	Farmers struggle to find alternative employment	Highlights economic instability caused by illegal mining
Bessah et al.	2021	Assess climate change and mining's effects on farming	Interviews and climate modeling	Mining exacerbates environmental stress on agriculture	Suggests sustainable land-use policies
Owusu-Nimo et al.	2018	Study the effects of mining on rural economies	Spatial distribution analysis	Illegal mining disrupts local food markets	Supports rural development initiatives
Rajae et al.	2015	Examine the ecological impact of galamsey	Environmental impact studies	Loss of biodiversity and soil depletion	Necessitates conservation strategies
Akyeampong & Xu	2023	Investigate the role of foreign mining technology	Case studies and field observations	Chinese technology has transformed mining, but displaced local economies	Advocates for balanced policy interventions
<b>Theme 5: Soil erosion and degradation</b>					
Ghana Environmental Protection Agency	2019	Assess soil degradation in mining areas	Field studies and soil quality analysis	Loss of fertile land affects agricultural productivity	Urges sustainable land reclamation efforts
<b>Theme 6: Displacement and Resettlement Issues</b>					
World Bank	2011	Analyze social displacement from mining	Case studies and stakeholder interviews	Communities are often displaced without adequate resettlement	Calls for better compensation and planning
IFC	2015	Investigate the impact of mining-induced resettlement	Socioeconomic studies and policy analysis	Relocated communities face long-term economic hardship	Suggests more inclusive relocation strategies
Cernea & McDowell	2000	Study global mining resettlement trends	Comparative analysis of case studies	Poorly managed resettlements increase poverty	Advocates for human-centered resettlement approaches
<b>Theme 7: Social Conflicts and Stakeholder Engagement</b>					

Hilson	2012	Investigate mining-related social conflicts	Policy review and community engagement analysis	Land disputes and stakeholder conflicts hinder sustainable mining	Emphasizes the need for better stakeholder collaboration
Lacey & Rawlinson	2011	Study corporate-community relations in mining	Interviews and conflict resolution analysis	Lack of stakeholder engagement worsens tensions	Encourages inclusive decision-making
Boutilier & Thomson	2011	Analyze social license issues in resource extraction	Case studies and industry reports	Effective engagement reduces mining-related conflicts	Supports transparent stakeholder policies

***Galamsey as an Asset***

***Employment Generation***

The Ghana Chamber of Mines (2020) and the World Bank (2020) both acknowledge mining as an important employment industry, creating jobs in extraction and related services. They illustrate how both large-scale and small-scale mining (including galamsey) offer income for people, particularly in rural areas where alternative work is uncommon. In response, Banunle et al. (2018) and Wiafe et al. (2022) contend that although galamsey creates jobs, it does so in dangerous settings that expose employees to air pollution and dangerous chemicals. This jeopardizes Galamsey's long-term viability as an employment industry.

***Government Revenue and Fiscal Management***

The World Bank (2020) and the Ghana Extractive Industries Transparency Initiative (2021) concentrate on how royalties and taxes from the formal mining industry support government coffers. However, due to its informal nature and lack of regulation, galamsey does not provide a substantial contribution to government revenue. According to Akyeampong & Xu (2023), Galamsey stimulates local economies through direct spending, even though it does not pay official taxes. However, this economic contribution is still uncertain and does not support national development planning due to the absence of formal financial regulation.

***Contribution to GDP and Foreign Exchange Earnings***

Aryee (2001) presents a historical perspective, demonstrating how mining has played a significant role in Ghana's industrialization and GDP. The World Bank (2020) concurs but cautions that galamsey interferes with official mining activities, which lowers the industry's potential earnings. Donkor et al. (2023) provide a fresh perspective by demonstrating how environmental costs associated with Galamsey, like pollution and land degradation, lower agricultural productivity. By harming other productive industries, this subtly depresses the economy and negates any GDP gains from gold exports.

***Galamsey as a Menace***

***Deforestation and Land Degradation***

Strong evidence that galamsey causes significant deforestation, soil erosion, and biodiversity loss is provided by the Ghana Environmental Protection Agency (2019). Although Aryee (2001) concedes that mining contributes to economic expansion, he contends that mining and environmental sustainability can coexist under appropriate regulation. However, the harm is extensive in the context of Galamsey, where illicit activities frequently disregard environmental laws, rendering Aryee's (2001) viewpoint less relevant.

***Water Pollution and Contamination***

The World Bank (2020) and Fortin et al. (2010) confirm that illegal mining significantly contaminates water sources with mercury and cyanide, posing severe risks to human health and aquatic ecosystems. Banunle et al. (2018) argue that despite policy interventions, enforcement remains weak, allowing water pollution to persist. This highlights a governance gap that needs to be addressed if the environmental costs of galamsey are to be reduced.

***Respiratory Diseases and Lung Conditions***

According to all five sources, severe respiratory illnesses are caused by galamsey enterprises' poor working conditions, hazardous chemical exposure, and mining dust exposure. Long-term pulmonary disorders brought on by silica dust inhalation are highlighted by Fortin et al. (2010) and Banunle et al. (2018). According to Afriyie et al. (2023) and Sebiawu et al. (2020), the absence of protective gear among miners increases health hazards and increases the prevalence of respiratory illnesses in Galamsey villages. According to Wiafe et al. (2022), prolonged exposure to contaminants can still cause serious health problems despite safety precautions.

***Loss of Livelihoods***

The research by Gilbert & Albert (2016) and Yen et al. (2012) demonstrates how galamsey causes farmers to be displaced, which results in food insecurity and unstable economies in the impacted areas. According to Donkor et al. (2023), mining-related soil contamination lowers agricultural production and exacerbates the financial difficulties faced by displaced farmers. Illegal mining provides no organized alternatives for displaced people, in contrast to formal mining, which occasionally includes

compensation for impacted communities.

### ***Soil Erosion and Degradation***

According to the Ghana Environmental Protection Agency (2019), galamsey causes soil erosion, which makes land unusable for further farming. The report offers substantial proof of the lasting environmental damage brought on by illicit mining, but it does not attempt to refute any claims in support of Galamsey.

### ***Displacement and Resettlement Issues***

According to all three sources, economic suffering results from displacement brought on by mining. While the IFC (2015) promotes more inclusive relocation plans, the World Bank (2011) highlights the need for improved compensation systems. Poorly designed resettlements, according to Cernea & McDowell (2000), frequently make poverty worse rather than better, indicating that existing regulations are ineffective in protecting displaced communities.

### ***Social Conflicts and Stakeholder Engagement***

Boutilier & Thomson (2011), Lacey & Rawlinson (2011), and Hilson (2012) concur that ineffective communication between government officials, local communities, and mining firms leads to conflicts. Boutilier & Thomson (2011) contend that disputes continue because businesses put profits ahead of social responsibility, despite Hilson (2012)'s suggestion that more corporate-community interaction can ease tensions. This suggests that stronger regulatory frameworks are required and that voluntary corporate actions are insufficient.

## **Synthesis of Evidence**

Galamsey, which is illegal mining, is a contentious topic in Ghana. It offers rural jobs but generates economic instability. The Ghana Chamber of Mines (2020) and World Bank (2020) document the creation of jobs in transport and supplies. Its informal nature, however, provides precarious employment, disrupted by government crackdowns. Mining increases government income through royalties and taxation, financing infrastructure and social services (Ghana Extractive Industries Transparency Initiative, 2021). Corruption and mismanagement, however, undermine public gains. Aryee (2001) warns that mining dependence is unsustainable due to environmental degradation.

Environmental degradation is a significant concern. The Ghana EPA (2019) names deforestation, land degradation, and loss of biodiversity. Mercury and cyanide water pollution threaten aquatic life and human health (World Bank, 2020; Afriyie et al., 2023). Health threats include respiratory illness and heavy metal poisoning (Fortin et al., 2010; Banunle et al., 2018). Galamsey negates cocoa farming and leads to social conflicts (Gilbert & Albert, 2016; Hilson, 2012). Foreign technology improves efficiency but endangers local jobs (Akyeampong & Xu, 2023). To solve these issues, there needs to be more regulation, health

safeguards, and environmental alternatives.

## **Conclusion**

Illegal small-scale mining, or galamsey, poses opportunities and threats to Ghana's economy. It generates employment and revenue but has significant environmental and social consequences. Galamsey results in deforestation, land degradation, water pollution, and health risks undermining sustainable development. The destruction of cocoa farms heightens food insecurity and economic instability, while the displacement of people leads to social conflicts.

These issues need strong policies that weigh economic gains and nature preservation. Tightening regulations and enforcement are imperative. Empowering institutions like the Minerals Commission and the EPA will improve law enforcement and compliance with sustainable mining. Legalizing small-scale mining by licensing and training will halt illicit activities and ensure responsible mining practices. Investment in reforestation, land reclamation, and water conservation restores degraded ecosystems. Vocational training, agricultural support, and microfinance for alternative livelihoods reduce galamsey dependence. Greater stakeholder engagement and governance ensure equitable resource distribution. Galamsey has implications for Ghana's economy, yet reforms are urgently needed. Promoting sustainability, enforcing legislation, and providing alternatives can lead to sustainable resource extraction and long-term sustainability.

## **Acknowledgments**

We would like to express our appreciation to all those who engaged in this study.

## **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## **Institutional Review Board Statement**

Not applicable.

## **Informed Consent Statement**

Not applicable.

## **Data Availability Statement**

The original contributions presented in the study are included in the article/supplementary material; further inquiries can be directed to the corresponding author.

## **Statements and Declarations**

No funding was received for conducting this study. The present study has no relevant financial or non-financial interests to disclose.

## **Publisher's Note**

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors,

and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

## Author Contributions

This work was carried out in collaboration among all authors. This project was conducted jointly by the authors. The authors reviewed and agreed to the final manuscript. All authors read and approved the final manuscript.

## About the Authors

### Christian Kofi Sarpong

Centre for Settlement Studies, Kwame Nkrumah University of Science and Technology, Ghana

### Romanus Dokgubong Dinye

Centre for Settlement Studies, Kwame Nkrumah University of Science and Technology, Ghana

## References

- Africa (2024). "Ghana mining advantages include increased gold production and regulatory updates - Africa 2024 - Oxford Business Group". *oxfordbusinessgroup.com*.
- Afriyie, R. Z., Arthur, E. K., Gikunoo, E., Baah, D. S., & Dzifa, E. (2023). Potential health risk of heavy metals in some selected vegetable crops at an artisanal gold mining site: A case study at Moseaso in the Wassa Amenfi West District of Ghana. *Journal of Trace Elements and Minerals*, 100075. <https://doi.org/10.1016/j.jtemin.2023.100075>
- Akyeampong, E., & Xu, L. (2023). Chinese technology and the transformation of the rural economy in Ghana: Evidence from Galamsey in the Ashanti and Savannah regions. *African Affairs*, 122(448), 329-351. <https://doi.org/10.1093/afraf/adad023>
- Aryee, B. (2001). Ghana's mining sector: Its contribution to the national economy. *Resources Policy*, 44, 1-10. [https://doi.org/10.1016/S0301-4207\(00\)00042-8](https://doi.org/10.1016/S0301-4207(00)00042-8)
- Bessah, E., Raji, A. O., Taiwo, O. J., Agodzo, S. K., Ololade, O. O., Strapasson, A., & Donkor, E. (2021). Gender-based variations in the perception of climate change impact, vulnerability, and adaptation strategies in the Pra River Basin of Ghana. *International Journal of Climate Change Strategies and Management*, 13(4/5), 435-462. <https://www.emerald.com/insight/content/doi/10.1108/IJCCSM-02-2020-0018/full/html>
- Bibek (2025). Mineral Deposits of Ghana. [https://www.linkedin.com/in/bibek-1993?lipi=urn%3AIn%3Apage%3Ad\\_flagship3\\_profile\\_view\\_base\\_contact\\_details%3BOZ4LymIcRduFO27GhtxBmQ%3D%3D](https://www.linkedin.com/in/bibek-1993?lipi=urn%3AIn%3Apage%3Ad_flagship3_profile_view_base_contact_details%3BOZ4LymIcRduFO27GhtxBmQ%3D%3D)
- Boutilier, R. G., & Thomson, I. (2011). Social License and the Resource Sector. *Journal of Business Ethics*, 101(2), 243-267.
- Bryceson, D. F., & Geenen, S. (2016). Artisanal frontier mining of gold in Africa: Labour transformation in Tanzania and the Democratic Republic of Congo. *African Affairs*, 115(459), 296-317.
- Cernea, M. M., & McDowell, C. (2000). Risks and Reconstruction: Experiences of Resettlers and Refugees. *World Development*, 28(5), 827-849.
- Donkor, P., Siabi, E. K., Frimpong, K., Mensah, S. K., Siabi, E. S., & Vuu, C. (2023). Socio demographic effects on role assignment and associated occupational health and safety issues in artisanal and small-scale gold mining in Amansie Central District, Ghana. *Heliyon*, 9(3). [https://www.cell.com/heliyon/pdf/S2405-8440\(23\)00948-9.pdf](https://www.cell.com/heliyon/pdf/S2405-8440(23)00948-9.pdf)
- Esdaile, L. J., & Chalker, J. M. (2018). The Mercury Problem in Artisanal and Small-Scale Gold Mining. *Chemistry – A European Journal*, 24(27), 6905-6916. <https://doi.org/10.1002/chem.201704840>
- Fortin, J.-L., Desmettre, T., Manzon, C., Judic-Peureux, V., Peugeot-Mortier, C., Giocanti, J.-P., Hachelaf, M., Grangeon, M., Hostalek, U., & Crouzet, J. (2010). Cyanide poisoning and cardiac disorders: 161 cases. *The Journal of Emergency Medicine*, 38(4), 467-476. <https://doi.org/10.1016/j.jemermed.2009.09.028>
- Gbireh, A. B., Cobblah, A., & Suglo, R. S. (2009). Analysis of the trends of gold mining in Ghana. *Ghana Mining Journal*, 9(1), 38-49. <https://doi.org/10.4314/gm.v9i1.42608>
- Ghana Chamber of Mines. (2021). *Annual report 2020: Performance of the mining sector*. Ghana Chamber of Mines. "THE GHANA CHAMBER OF MINES 2021 MINING INDUSTRY STATISTICS AND DATA" (PDF).
- Ghana Environmental Protection Agency. (2019). Environmental performance rating and disclosure report for mining companies in Ghana. <https://www.epa.gov.gh/>
- Ghana Extractive Industries Transparency Initiative. (2021). 2019 Mining sector report. <https://gheiti.gov.gh/site/>
- Ghana Extractive Industries Transparency Initiative. (2021). *Annual report on mining revenue and governance challenges in Ghana*.
- Gilbert, D., & Albert, O.-B. (2016). Illegal small-scale gold mining in Ghana: A threat to food security. *Journal of Food Security*, 4(5), 112-119. DOI:10.12691/jfs-4-5-2
- Hilson, G. (2002). Small-scale mining and its socio-economic impact in developing countries. *Natural Resources Forum*, 26(1), 3-13.
- Hilson, G. (2009). Small-scale mining, poverty and economic development in sub-Saharan Africa: An overview. *Resources Policy*, 34(1-2), 1-5. <https://doi.org/10.1016/j.resourpol.2008.12.001>
- Hilson, G. (2012). The nature, impact and management of mining conflicts in Ghana. *Journal of Cleaner Production*, 29-30, 53-59.
- Hilson, G., & Hilson, A. (2015). *Entrepreneurship, poverty and sustainability: Critical reflections on the formalisation of small-scale mining in Ghana*. International Growth Centre. Retrieved from <https://www.theigc.org/sites/default/files/2015/04/Hilson-Hilson-2015-Working-Paper-1.pdf>
- Hilson, G., & Maconachie, R. (2020). Artisanal and small-scale mining governance in Ghana. *Journal of*

- Mining Policy*, 17(3), 101-120.
- Hirons, M. (2020). How the sustainable development goals risk undermining efforts to address environmental issues in Sub-Saharan Africa. *World Development*, 127, 104-108.
- Intergovernmental Forum on Mining. (2018). *Global trends in artisanal and small-scale mining: A review of key issues*. IGF. <https://www.igfmining.org/global-trends-in-artisanal-and-small-scale-mining-a-review-of-key-issues/>
- International Finance Corporation (IFC). (2015). Performance Standards on Environmental and Social Sustainability.
- Lacey, N., & Rawlinson, A. (2011). Securing the Social License to Operate: Cases in Global Mining. *Corporate Social Responsibility and Environmental Management*, 18(6), 343-354.
- Mensah, E. O., & Darku, E. D. (2021). The impact of illegal mining on public health: A case study in kenyasi, the ahafo region in Ghana. *Technium Soc. Sci. J.*, 23, 1. <https://techniumscience.com/index.php/socialsciences/article/view/4503>
- Owusu, K. (2021). Land use transformation and spatial economy in Ghana: Challenges and prospects. *African Geographical Review*, 40(2), 223-240.
- Owusu-Nimo, F., Mantey, S. D., Nyarko, K. B., Appiah-Effah, E., & Aubynn, A. (2018). The impact of Chinese involvement in small-scale mining in Ghana. *Resources Policy*, 55, 49-56.
- Rajae, M., Obiri, S., Green, A., Long, R. N., Cobbina, S. J., Nartey, V., Buck, D., Antwi, E., & Basu, N. (2015). Integrated assessment of artisanal and small-scale gold mining in Ghana—Part 2: Natural sciences review. *International Journal of Environmental Research and Public Health*, 12(8), 8971-9011. <https://doi.org/10.3390/ijerph120808971>
- Reuters. (2024). *Gold mining in Ghana: Booms and environmental consequences*. Reuters News.
- Sarpong, C. K., Dinye, R. D., & Elizabeth, S. (2025). Managing land use disputes in mining areas in Sub-Saharan Africa. *Journal of Modern Social Sciences*, 2(3), 215–225.
- Sebiawu, G. E., Antwi-Akomeah, S., Mensah, N. J., & Abana, D. (2020). Heavy metal and bacteriological contamination of herbal medicines sold over the counter in the municipality of wa of the upper West Region-Ghana. *International Journal of Scientific Research in Multidisciplinary Studies*, 6(5), 15-23. [https://www.isroset.org/journal/IJSRMS/full\\_paper\\_view.php?paper\\_id=1889#parentHorizontalTab3](https://www.isroset.org/journal/IJSRMS/full_paper_view.php?paper_id=1889#parentHorizontalTab3)
- Takyi, R., Hassan, R., El Mahrad, B., & Adade, R. (2021). Socio-ecological analysis of artisanal gold mining in West Africa: A case study of Ghana. *Journal of Sustainable Mining*, 20(3), Article 6. <https://doi.org/10.46873/2300-3960.1322>
- Wiafe, S., Awuah Yeboah, E., Boakye, E., & Ofosu, S. (2022). Environmental risk assessment of heavy metals contamination in the catchment of small-scale mining enclave in Prestea Huni-Valley District, Ghana. *Sustainable Environment*, 8(1), 2062825. <https://doi.org/10.1080/27658511.2022.2062825>
- World Bank. (2011). *Involuntary Resettlement. Environmental and Social Framework*.
- World Bank. (2020). Ghana mining sector development and environment project. <https://projects.worldbank.org/en/projects-operations/project-detail/P147862>
- World Bank. (2020). *Global trends in foreign direct investment in the mining sector*. World Bank Group.
- World Gold Council. (2015). *The economic contribution of large-scale mining to Ghana's GDP and employment*. World Gold Council. <https://www.gold.org/goldhub/research/economic-contribution-large-scale-gold-mining-ghana>
- World Gold Council. (2021). *The economic impact of gold mining: Global contributions and financial stability*. World Gold Council Reports.
- Yeboah, S. A., & Nyarkoh, B. J. (2022). *The impact of mining on the Ghanaian economy: A comprehensive review (1992-2020)*. *Munich Personal RePEc Archive (MPRA)*. <https://mpra.ub.uni-muenchen.de/117502/>
- Yen, Y.-P., Tsai, K.-S., Chen, Y.-W., Huang, C.-F., Yang, R.-S., & Liu, S.-H. (2012). Arsenic induces apoptosis in myoblasts through a reactive oxygen species-induced endoplasmic reticulum stress and mitochondrial dysfunction pathway. *Archives of Toxicology*, 86(6), 923–933. <https://doi.org/10.1007/s00204-012-0864-9>