

# Small Scale Mining and Rural Livelihoods: How is Small Scale Mining Affecting Livelihoods in Ghana?

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**ABSTRACT** The purpose of this paper is to explore the dynamics of small-scale mining in Ghana today, as well as the effects it has on rural livelihoods. Mineral resources and mining play an important part in the country's social and economic growth, as well as providing people with jobs and increasing overall per capita income. In the case of Ghana, the government is expected to use its abundant mineral resources, notably gold, to build its economy, create jobs, and improve rural development. Despite this, the country has recently been seen to suffer from a variety of severe effects on its rural population, including environmental degradation, deterioration of farming land and water bodies, erosion caused by small-scale and illegal mining activities popularly known as "Galamsey," all of which have a negative impact on livelihoods, food security, and the larger development. The paper argues that the country's environment and rural livelihoods are at risk unless adequate systems and political will are put in place to regulate small-scale mining activities in the country, particularly by the government, its minerals and natural resources ministry, non-state agencies, civil society, and environmental-friendly organizations both local and international.

**Keywords:** Small Scale Mining, Illegal Mining, 'Galamsey', Effects, Rural Livelihoods, Environment, Ghana.

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## 1. INTRODUCTION

The purpose of this paper is to investigate the nature of small-scale mining in Ghana, as well as the effects it has on the environment and rural populations' livelihoods. Mineral resources and mining have a significant influence in a country's socio-economic development in terms of producing jobs and increasing overall per capita income. In the case of Ghana, the government is expected to use its abundant mineral resources, particularly gold, to expand its economy, create jobs, and improve its rural landscape (Owusu et al., 2021; Boateng, 2018). Despite this, the country has recently been seen to suffer from a variety of severe effects on its rural population, including environmental degradation, deterioration of farming land and water bodies as a result of small-scale and illegal mining activities popularly known as "Galamsey," all of which have a negative impact on the livelihoods of the country's rural population (Owusu et al., 2021; Boateng, 2018; Bagah et al., 2016). In view of this, the research will look into the resource curse's conundrum, its contestation among rural populations, and the effects it has on the environment and rural livelihoods.

Ghana's mining sector has made a significant contribution to the country's social and economic growth (Owusu et al., 2021; Ghana Chamber of Mines, 2011). Ghana's gold mining industry accounts for almost 90% of the country's total mineral output. The country exported over 40.7 tons of gold through artisanal mining activities

in the years 2013 and beyond, valued at US\$1.7 billion (Minerals Commission, 2014). Other important minerals, such as diamond, bauxite, and manganese are mined throughout the country's many regions and rural areas. Despite the country's rich resource nature and mining sector prospects, the influx of small-scale and illegal mining activities, mostly in rural areas, has created a dilemma in which the extraction of these minerals, particularly gold, has had disastrous consequences on the human and natural environment (Boateng, 2018). This has resulted in the continued loss of farmlands, drinking water sources, air pollution, deforestation, erosion, and most importantly, the deterioration of rural livelihoods, which are mostly reliant on farmland for existence (Owusu et al., 2021; Bagah et al., 2016; Dwomoh and Owusu, 2012). The argument is that the extraction of mineral resources, which was supposed to boost the rural economy and improve livelihoods, has now become a curse, causing severe poverty and negatively impacting people's health and general well-being due to the effects on the environment, its surroundings and livelihoods.

From this, it is clear that the current rate of environmental degradation and livelihood deterioration as a result of mining activities is alarming, as it continues to affect human health, physical security and wellbeing through rapid and persistent destruction of landscapes, agricultural soil depletion, and pollution of water bodies, all of which are critical for meeting the material and resource needs of rural people. In view of present climate challenges that many developing and agriculturally-driven countries, such as Ghana face, the scenario also poses a barrier to meeting the Sustainable Development Goals (SDGs) in the case of environmental sustainability. This is where the human-environment connection comes into play. According to Ostergren and Le Bosse (2011), the human-environment interaction is a fundamental aspect of life with numerous implications- as a result, the environment provides rich infinite possibilities for human use, allowing humans to make significant choices and decisions based on technological and cultural development.

However, some features of human environmental decisions tend to operate as a pathway for destructing and creating destructive consequences on the environment and its resources to some level. It should also be mentioned that exploration is not a new occurrence, but has evolved over time. Nonetheless, the transition from exploration to extraction has the potential to have serious consequences for the environment and human society as a whole. This backs up Martinez-Alier's (2002) assertion that the consequences of poor environmental choices and decisions will be far more severe for future generations than for current generations. Using the Juaben district in the Ashanti region as a case study, the research attempts to navigate the dynamics of small-scale and illicit mining in rural Ghana. This looks at the reasons for illicit mining, as well as the long-term and destructive effects on the ecosystem and rural communities. For the theoretical underpinnings, the paper uses the lenses of the sustainable livelihoods approach and its relationships with small scale mining.

## **2. THE STRUCTURE AND NATURE OF SMALL SCALE MINING IN GHANA**

Large-scale and small-scale miners both operate in Ghana's mining industry. Multilateral mining firms from all over the world, including South Africa, Canada, and Australia, make up the big scale mining sector. They own over 80% of the mining industry (Owusu et al., 2021; Akabzaa and Darimani, 2001). Small-scale mining, which includes artisanal and illegal operations, accounts for around 34% of gold production in the country (Boateng, 2018; Ghana Minerals Commission and Human Rights Watch, 2015). In terms of employment, it is projected that small-scale mining employs over one million people, whereas large-scale mining employs approximately 28, 000 people (McQuilken and Hilson, 2014). Recent investigations on mining activities in Ghana have found that confrontations between the large-scale and small-scale mining industries for land occupation and use have occurred. This leads to land disputes between the two groups, which occur often in rural communities across the country as a result of the conflict over land use for mining (Boateng, 2018; Hilson, 2005).

Several government and non-state policy measures have been made over the years to combat the effects of illegal mining on the environment and rural livelihoods, but they have not matched expectations. This is due to the nature of the inequalities, disparities, and challenges that have been placed primarily on the rural population and communities, and as a result, they justify their actions by engaging in a variety of illegal mining

activities that employ unacceptable techniques and measures, affecting the communities, environment, and livelihoods of the residents in the short and long term (Owusu et al., 2021; Owen and Kemp, 2012; ICMM, 2002). Due to a lack of employment possibilities for young people, particularly in rural areas of the country, the majority of them have turned small-scale miners in order to make a living and escape their terrible poverty.

The artisanal extraction of mineral resources such as gold, diamond and bauxite is referred to as small scale mining. In order to extract mineral resources, the activity necessitates the use of crude and overly manual techniques (Owusu et al., 2021). Small scale mining is defined in Ghana as mining activities involving individuals or groups of roughly 4-8 people who are organized and, in most cases, are substantially supported by the individuals or groups on a full-time or part-time basis using simple mining instruments (Fatawu and Allan, 2014). In many developing nations, including Ghana, the practice requires the employment of hazardous circumstances and systems, which, in many cases, have a detrimental influence on the environment, community health, and the whole lives of the residents and communities surrounding the mining area (Petra and Kamini, 2007; Kesse, 2006; Barning, 2002). Small-scale mining has been considered to be a source of poverty in many developing countries (Barning 2002). Residents of mining areas, seasonal subsistence farmers, migrants, community leaders and nomadic people are among the primary actors involved in small-scale mining in Ghana (Owusu et al., 2021; Fatawu and Allan, 2014). Poverty and unemployment are major factors that push many community members and other individuals, particularly the youth to engage in illicit mining activities in order to make ends meet in their communities, according to studies on mining in Ghana.

It's worth noting that the country's small-scale mining sector has a significant power dynamic. Power is typically concentrated among landowners, gold purchasers, and traditional and community leaders (Boateng, 2018). Chinese migrants have recently gained authority, coordinating with some traditional and community leaders, financing mining activities and participating in the extraction of mineral resources, particularly gold (Owusu et al., 2021; Boateng, 2018). Chinese migrants working in small-scale mining have been observed gaining an excessive amount of profit by employing rudimentary procedures, posing significant environmental and health risks to rural life (Hirons, 2015; Hilson et al., 2014). Small-scale mining in Ghana, as well as in many other developing nations, has been characterized by a lack of adherence to environmental legislation and hazardous safeguards, resulting in extensive impacts on residents, children and natural forest reserves (Buxton, 2013; Hilson, 2001).

### **3. UNRAVELLING THE NEXUS: SMALL SCALE MINING AND SUSTAINABLE LIVELIHOODS**

People's needs and ability to recuperate, cope with shocks and stressors, and increase their strengths and capacities in the present and future are all part of sustainable livelihoods. With the introduction of the sustainable livelihoods approach (SLA), the promotion of sustainable livelihoods has become highly prominent in modern development issues (Scoones, 2009). The sustainable livelihoods method articulates people's comprehensive views, particularly in rural regions on how to improve and enhance their lives while also ensuring the environment and its resources' long-term viability (Lu and Lora-Wainwright, 2014; Chambers and Conway, 1992). Sustainable livelihoods, in this context, encompass not just people's assets and abilities to make a living, but also the articulation and ownership of important knowledge, information, and resources that are critical for effectively employing the assets they have.

The environment and its resources' long-term viability is also critical for rural people's livelihoods, as well as their continued presence and occupation in society. In this situation, mining of mineral resources such as gold is critical due to its benefits in terms of creating jobs, giving revenue and increasing the country's GDP. Small-scale and illegal mining on the other hand, causes and exacerbates the destruction of the environment and its resources, including land, water bodies, plants and the entire biodiversity, all of which are sources of livelihood for people, rendering the prospects invalid in the short and long term. Human beings are recognized as a critical component of the livelihoods campaign (Horsley et al., 2015), and any action that destroys the environment and people's livelihoods, such as the use of undesirable methods and unlawful mining techniques and practices, is questioned.

Furthermore, one of the main concerns of sustainable livelihoods is poverty reduction. When certain people's actions, such as mining, degrade and endanger the lives of others in and around their communities and beyond, accomplishing the aim of eradicating extreme poverty becomes very difficult (Acquah et al., 2020). Most rural residents in Ghana are actively engaged in farming, so the loss of their farmlands, water bodies, trees, and other natural resources has a negative impact on their livelihoods. This is because they risk losing their possessions, which provide them with a source of income as well as other basic necessities such as food, shelter, and clothing for themselves and their dependents. The status of the poor, who are the most vulnerable in rural communities, is deteriorating, and they continue to live in poverty. All planning programs and projects, whether mining or community development, should always ensure that the poor are included in the decision-making process (Forson et al., 2016). With this in mind, it should be emphasized that mineral resource mining, in all of its forms, should be made to include and prioritize the social, economic, cultural, political, and environmental concerns and needs of the surrounding communities rather than the short-term financial and other economic benefits that come with it. This will pave the road for environmental protection, resource augmentation, and improved livelihoods for current and future generations.

#### 4. METHODOLOGY AND METHODS

The study took a qualitative method, employing semi-structured interviews with study participants. Small-scale farmers, miners, ex-miners, opinion leaders, and traders were among the research participants who were purposefully chosen for the interviews in the Juaben district. The interviews were conducted with a total of twenty people, both men and women. The research findings and results were divided into three main thematic areas: the underlying factors that lead to small-scale and illegal mining, the effects of mining on the environment and residents' livelihoods, and the policy measures required to address the alarming rate of illegal mining in rural communities. The several theme categories allowed for a more detailed examination and explanation of the research's material, data, conclusions and findings.

#### 5. ANALYSIS AND RESULTS OF THE RESEARCH

The analysis and presentation of the research's findings and results are covered in this section. It incorporates information from the evaluated literature as well as the participant interviews. This made it possible to thoroughly evaluate data and information from the study interviews in reference to existing literature, taking into account where they intersected. Key policy recommendations and initiatives are drawn as a result of this, taking into account the paper's overall findings.

**Profile of the Research Participants**

Participant	Age (Years)	Gender	Occupation
1	28	Male	Farmer
2	29	Male	Miner
3	31	Male	Miner
4	27	Male	Farmer/Miner
5	28	Male	Mason
6	27	Male	Carpenter
7	31	Male	Miner
8	27	Male	Trader
9	47	Male	Farmer/Mason
10	52	Male	Farmer/Ex-Miner
11	33	Female	Trader/Hairdresser
12	21	Female	Hairdresser
13	22	Female	Trader
14	61	Female	Trader
15	28	Female	Trader

16	35	Female	Farmer
17	65	Female	Farmer/Trader
18	41	Female	Farmer
19	42	Female	Farmer/Trader
20	28	Female	Trader

Source: Authors' Field Data

## 6. WHY DO PEOPLE ENGAGE IN SMALL SCALE AND ILLEGAL MINING ACTIVITIES?

Several characteristics that promote small-scale and illegal mining activities in rural communities have been discovered through the analysis of literature and interviews with research participants. The problem of insufficient employment emerged as a prominent element in almost all of the literature and interviews. This is especially true of the country's rural youth population, as well as the mining community in this situation. Small-scale mining, particularly in rural communities, is viewed as a poverty-driven activity, according to Sheldon et al., (2002). He claims that in order to get out of extreme poverty, most people turn to small-scale and illegal mining, particularly in their towns and beyond where there are abundant natural resources, such as gold, to make a living. During the interviews, the majority of the participants noted this. "With the persisting unemployment on the part of most youths in the mining community, they have moved to engage in illegal mining in the community and other surrounding mining areas either on an individual basis or within a group of small scale miners," a young middle-aged man said during the interview. This backs up the argument made earlier in the introduction and literature review that with persistent poverty and restricted work prospects for those living in rural areas with mineral resources, the likelihood of young people engaging in illegal mining is very high. "After losing his work in a processing plant, he had no choice but to join his friends in doing illegal mining in a nearby village," a young man said in the interview.

Another aspect that facilitated small-scale and illicit mining was a lack of enforcement of environmental and mining restrictions. Ghana has solid environmental and mining rules and regulations, but a lack of political will to enforce them has created a climate that allows individuals and groups to engage in unlawful mining operations without fear of facing the repercussions of breaching the law (Boateng, 2018; Fatawu and Allan, 2014). The environment and people's livelihoods are at risk unless there are proper legislation and enforcement mechanisms in place to prosecute and deal with illicit mining operations in rural communities across the country (Boateng, 2018; Bagah et al., 2016). The majority of the residents interviewed stressed this, suggesting the necessity for rigorous environmental and land resource protection laws and regulations. "Without the cooperation of the government and its department in charge of mining on regulating small scale miners, our farmlands and farms face a great risk from the activities and impacts of illegal mining," a young female farmer said in the interviews. With the current government's attempts to combat illicit mining in the country, it is projected that illegal mining activities will decrease across the country's rural areas and communities. The majority of people, civil society and the media have praised the government for taking this step to combat illegal mining in communities across the country, but they have warned the government and its authorities, particularly the security services, about how they handle illegal mining activities, especially how mining excavators are seized and destroyed.

Local actors and players in the mining sites have been observed to impact another component of illegal mining in rural communities. Traditional chiefs, who are in many cases the guardians of the lands within their authority, community leaders and other community opinion leaders are among these actors (Dwomoh and Owusu, 2012). Local actors, particularly chiefs, have recently been chastised for facilitating illegal mining in rural regions by granting lands to illegal miners, including individuals, local groups and Chinese migrant miners in exchange for a price (Boateng, 2018; Bagah et al., 2016). This creates a situation where authorities and environmental agencies tasked with regulating illegal miners find it difficult to effectively check on the miners

because it is hard to identify and deal directly with those who engage in unacceptable mining operations as such people tend to have the support of some chiefs, community leaders and other influential people.

Last but not least, the research found that most miners lack proper knowledge and skills, which is encouraging the illicit mining. The majority of small-scale illegal miners were seen to be young people who had dropped out of school or were unemployed, and lacked basic information about mining, its effects and implications on livelihoods and the environmental problems that come with it. Both the literature and the interviews revealed a lack of relevant knowledge of many illegal miners and the effects they have on land resources, such as the destruction of water bodies and the toxic chemicals sprayed into rivers and streams in the mining communities.

## **7. HOW IS SMALL SCALE MINING ENDANGERING LIVELIHOODS?**

Despite the benefits of mineral resources and mining in Ghana in terms of creating jobs and contributing to the country's social, economic and rural development, the effects on the environment and livelihoods have been severe in recent years, especially when considering the negative consequences on the rural community and surrounding towns and villages. The study has revealed a number of negative consequences of small-scale and illegal mining on the lives of rural residents and their communities. As a result, the section looks at the detrimental effects that mining activities are having on mining communities, livelihoods and the environment.

The devastation of farmlands and surrounding land regions is a major effect of small-scale mining on the environment and people (Acquah et al., 2020; Bagah et al., 2016). According to the research, mining activities have impacted the farms of the majority of the residents due to their proximity to farmlands. Due to a lack of compliance with mining rules, regulations and circumstances, most small-scale mining activities have negative consequences on land use for farming, releasing hazardous chemical substances that degrade the structure, fertility, and overall nature of the land use for farming. According to the interviews, this results in soil deterioration, which slows the growth, yield and overall production of farm food produced by farmers near mining sites. "In view of the continued mining activities around the farming areas, our farms have been heavily affected, with regular erosions and a deterioration of the fertility of the soil; this has led to a lower yield of farm produce and a lowering in its quality because of the unsafe chemicals used on the land," a female middle-aged farmer stated emphatically during the interviews. Soil erosion is also quite common at mine sites, farming lands nearby and the entire community as a result of the digging of soils without sufficiently checking its replacement through proper procedures of recovering the land for effective and vital use later (Boateng, 2018; Asante et al., 2007). As a result, farmers' entire output is lowered, resulting in poorer revenues, poor living standards and conditions for the population.

Furthermore, the proximity of most mining operations to rural residents' water sources creates numerous issues for water use for domestic activities including cooking, drinking, washing and bathing. For their daily water needs, most rural residents rely on natural sources such as rivers and streams. Because of the mines' proximity to water bodies, toxic chemicals are released into the water, increasing the acidity of the water. It causes major health problems for the residents and their children, affecting their livelihoods and general living situations as human beings and citizens to a large extent. With the continued degradation of land and water bodies, achieving the section of the United Nations Sustainable Development Goals that ensures "equitable and universal access to affordable and safe water for everyone" becomes increasingly challenging. "Small-scale mining activities have affected most of the rivers and streams that are sources of drinking water, fish, food and other domestic uses for the inhabitants because of the close proximity of mining sites to water areas, and the release of dangerous chemicals that are very harmful when consumed by humans," a male elderly farmer lamented during the interviews. This backs a point made by Asante et al., (2007) that there is a high rate of water and soil contamination in regions where mining is done, with subsistence farming and proximity to water bodies, with major consequences for the quality of the water and food produced. Fish and other species' water habitats are also being destroyed, posing a threat to the natural environment and biodiversity.



Furthermore, the research has revealed that small-scale mining in rural communities has resulted in deforestation in the majority of the country's mining districts. Most forest areas with their natural resources, including plants are destroyed as a result of mining activities, resulting in the destruction of natural settings and habitats within them. As previously stated, when sand and other fertile topsoil are washed away through mining activities, adequate nutrients required for plant growth are harmed, resulting in deforestation and the collapse of the rich biodiversity surrounding mining and farming areas. People who live near mining sites and their surroundings are affected, and the repercussions of mining activities continue to have an impact on their development, advancement, living conditions and livelihoods as a whole.

Finally, by creating dredges through small-scale mining activities, space is created for mosquitoes to breed, which causes malaria. Also, breeding grounds for the female anopheles mosquito are formed as a result of mining pits and stagnant waters that are not properly treated. This has resulted in serious health issues, particularly in light of malaria, which mostly affects residents, particularly children, in mining areas (Boateng, 2018; Gyimah, 2017). The condition has a negative impact on the health of those who live in and around mining sites, and in some cases, it has resulted in unexpected deaths, especially among youngsters. Malaria has been identified as one of the most lethal diseases harming the lives of many people in the West African Sub-region, including Ghana, according to numerous publications and cases (Boateng, 2018). Small-scale mining activities, as well as the creation of untreated mining pits and dredges left behind after mining operations, can be considered one of the factors contributing to mosquito breeding and the resulting malaria on the livelihoods of residents in mining communities throughout the country.

## **8. ADVANCING POLICY MEASURES TO TACKLE SMALL SCALE MINING**

The mining sector has made significant contributions to Ghana's growth, yet, the negative impacts of small-scale and illegal mining on the environment and rural communities are far more damaging. To avoid future harm to people's lives and the environment in which they live, it is critical to adhere to and implement effective legislative measures aimed at reducing the threat of unregulated mining in the country. First and foremost, the legislation and practices governing mining, particularly small-scale mining in the country, should be strictly enforced. Small-scale and illegal miners use unaccepted mining practices that affects the lives of people, communities and the environment. The government and its agencies should make it a point and build the necessary political will to resist such operations. Regular checks and visits to mining sites and communities on regulatory activities, everyday mining operations and mining methods could be used to achieve this (Boateng, 2018; Bagah et al., 2016). Illegal miners in various mining towns, as well as their financiers should be scrutinized and compelled to face the country's laws governing illegal mining operations. This will establish guidelines for preventing other possible illegal miners from getting involved in the first place.

There should also be an inclusive decision-making method and cooperation between the government and main players in mining communities, such as chiefs, opinion leaders, civil society, environmental agencies and miners when it comes to mining laws and policies (Fatawu and Allan, 2014; Dwomoh and Owusu, 2012). People will become better aware of the regulations, systems, and laws on mining as well as strategies to prevent the use of unapproved mining methods and the actions of illegal miners through collaboration with all major stakeholders, including chiefs, miners and mining communities (Boateng, 2018). People will feel more involved in environmental, mining decisions and legislations if they are included in the process, ensuring their ownership and preservation of the environment and mining laws in their communities and beyond.

Regular and comprehensive public and community education is required to safeguard and ensure the environment's and rural livelihoods' long-term viability. State, non-state actors, civil society and the media should be actively involved through workshops and educational forums that engage local communities, miners, chiefs and opinion leaders on environmental measures, the effects of unapproved mining and techniques on farmlands, water bodies and the larger environment and the population living in it, and the

effects of unapproved mining and techniques on the larger environment and the population living in it (Bagah et al., 2016; Dwomoh and Owusu, 2012).

Again, state and non-state environmental and mining authorities should provide frequent training and teaching for miners on the proper and required practices for small-scale mining, as well as the benefits it provides to the environment and its inhabitants (Boateng, 2018). This will protect livelihoods and environmental standards, laying the path for the long-term viability of the environment, natural resources, land areas, water bodies and most importantly rural livelihoods. Governments and non-governmental organizations should also take steps to advance practices and policies aimed at enhancing the capacity of residents, particularly young people who have become susceptible and end up getting involved in illegal mining operations. Also, development projects and programs should always be expanded to rural areas, with job possibilities provided in the country's least-resourced neighborhoods. This will create possibilities for the youth, in particular, to gain access to income-generating opportunities and jobs that will allow them to leave small-scale and illegal mining.

## **9. CONCLUSION**

The nature and contours of small-scale mining in rural Ghana, as well as its effects on livelihoods were investigated in this research. Despite the benefits of small-scale mining to the country's social and economic development, the effects on rural livelihoods and the environment have been disastrous, according to the study. Due to a lack of employment options, individuals, particularly the youth, have turned to small-scale and illegal mining activities, which have had serious implications for rural livelihoods and the environment due to the use of unaccepted mining techniques and practices. Environmental degradation, destruction of crops and farmlands, pollution and contamination of water bodies and erosion have all been consequences.

The negative effects on farmlands and water supplies have resulted in a decrease in rural farmers' crop yields, as well as a dip in the quality and standards of food crops produced, all of which have an influence on food security and people's lives. To combat the alarming rate of small-scale and illegal mining in the country, effective efforts and policies should be made to work with state and non-state entities such as civil society, traditional chiefs and environmental agencies to ensure that mining laws and systems are regulated, controlled, and enforced. In addition, the state should exert the greatest political will in checking and controlling small-scale and illicit mining in all sections of the country. This will ensure that livelihoods and the environment are adequately protected.

## **10. FUTURE RESEARCH DIRECTIONS**

Future research could take a mixed-methods approach, combining quantitative and qualitative techniques to better understand the current nature, trends and dynamics of small-scale mining in Ghana, as well as the numerous dangers and consequences that mining communities, residents, youth, children and the larger society face. It could also conduct a comparative study of various mining communities in various districts and regions of the country in order to uncover the similarities, differences and approaches in the small-scale mining sub-sector, as well as the various factors that facilitate small-scale and illegal mining, particularly among the youth and rural communities, as well as the various impacts on society and sustainable development.

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## REFERENCES

- (1) Aboka, E.Y., Cobbina, S.J. and Doke, A.D. (2018). Review of Environmental and Health Impacts of Mining in Ghana. *Journal of Health and Pollution*, 8(17):43-52.
- (2) Akabzaa, T. and Darimani, A. (2001). Impact of the Mining Sector Investment in Ghana: A Study of the Tarkwa Mining Region. Washington: SAPRI.
- (3) Akabzaa, T., Seyire, J.S. and Afriyie, K. (2007). The Glittering Facade: Effects of Mining Activities on Obuasi and Its Surrounding Communities. Ghana, Accra: Third World Network.
- (4) Appiah, M. (2001). Co-partnership in Forest Management: The Gwira-Banso Joint Forest Management Project in Ghana. *Environmental Development and Sustainability*, 3(4): 343-360.
- (5) Aryee, B.N. (2012). Contributions of the Minerals and Mining Sector to National Development: Ghana's Experiment. *GREAT Insights*, 1 (5): 14-15.
- (6) Aryee, B.N., Ntibery, B.K. and Atorkui, E. (2003). Trends in Small Scale Mining of Precious Minerals in Ghana: A Perspective on Its Environmental Impacts. *Journal of Cleaner Production*, 11(2): 131-140.
- (7) Asante, K.A., Agusa, T., Subramanian, A., Ansah-Asare, O.D., Biney, C.A., Tanabe, S. and Ansong, K. (2007). Contamination Status of Arsenic and Other Trace Elements in Drinking Water and Residents from Tarkwa: A Holistic Mining Township in Ghana.
- (8) Bagah, D.A., Angko, W. and Tanyeh, J.P. (2016). Environmental Degradation and Small Scale Mining Nexus: Emerging Trends and Challenges in Northern Ghana. *Developing Country Studies*, 6(2):38-45.
- (9) Boateng, A. (2018). Effect of Small Scale Mining on the Environment in Ghana. Metropolia University of Applied Sciences.
- (10) Bush, R. (2009). Soon There Will Be No One Left to Take the Corpse to the Morgue: Accumulation and Abjection in Ghana's Mining Communities. *Resource Policy*, 34: 57-63.
- (11) Buxton, A. (2013). Responding to the Challenges of Artisanal and Small Scale Mining. How can Knowledge Networks Help? London: IIED.
- (12) Dwomoh, G. and Owusu, E.E. (2012). The Impact of Illegal Mining on the Ghanaian Youth: Evidence from the Kwaebibirem District in Ghana. *Research on Humanities and Social Sciences*, 2(6): 86-92.
- (13) Fatawu, N.A. and Allan, A. (2014). Managing the Impacts of Mining on Ghana's Water Resources from a Legal Perspective. *The Journal of Energy and Natural Resource Management*, 1(3): 156-165.
- (14) Franklin, S and Downing, T. (2013). Political Ecology of Vulnerability. Poverty and Vulnerability Programme GECAFS Project. Stockholm: Stockholm Institute of Environment.
- (15) Gyimah, N.Y. (2017). Uncovered Galamsey Pits Plunge Amansie West into Malaria Endemic Area. Available Online at Myjoyonline. [www.myjoyonline.com/news/2017/May-19th/uncovered-galamsey-pits-plunge-amansie-west-into-malaria-endemic-area.php](http://www.myjoyonline.com/news/2017/May-19th/uncovered-galamsey-pits-plunge-amansie-west-into-malaria-endemic-area.php). (Accessed on 20/10/2021).
- (16) Hilson, G. and Monhemius, A.J. (2006). Alternatives to Cyanide in the Gold Mining Industry: What Prospects for the Future. *Journal of Cleaner Production*, 14(12): 1158-1167.
- (17) Hilson, G. (2001). A Contextual Review of the Ghanaian Small Scale Mining Industry. London: International Institute of Environment and Development.
- (18) Hirons, M. (2015). Trees for Development? Articulating the Ambiguities of Power, Authority and Legitimacy in Governing Ghana's Mineral Rich Forest. *The Extractive Industries and Society*, 2, 491-499.
- (19) ICMM (2015). Mining in Ghana: What Future Can We Expect? Available Online. [www.tinyuri.com/jrow5qu](http://www.tinyuri.com/jrow5qu). (Accessed on 21/10/2021).
- (20) ICMM (2012). Human Rights in the Mining and Metals Industry Integrating Human Rights Due to Diligence into Corporate Risk Management Processes. London: ICMM.
- (21) ICMM (2002). The Mining and Metals Industries: Progress in Contributing to Sustainable Development. Working Paper, February 27.
- (22) Isung, C.B., Salifu, Y. and Aganu, T.A. (2021). The Socio-Economic Implication of Artisanal and Small Scale Mining on Mining Communities in Northern Ghana. *Open Access Library Journal*, 8,3.
- (23) Kervankiran, I., Dziwornu, M.G. and Temurcin, K. (2016). Illegal Mining as Threat to Sustainable Development in Ghana: A Political Ecology Approach. *ZfWT*, 8(3): 173-191.
- (24) Martinez, A.J. (2002). The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation. Edward Elgar Publishing.

- (25) Minerals Commission and Ghana Chamber of Mines (2002). Proceedings of the National Mining Conference on Mining, the Environment and Sustainable Development. Accra: Minerals Commission.
- (26) Ofosu-Mensah, A.E. (2010). Traditional Gold Mining in Adanse. *Nord. Jour. for African Studies*, 19: 124-147.
- (27) Opoku-Ware, J. (2010). The Social and Environmental Impacts of Mining Activities on Indigenous Communities: The Case of Newmont Gold Ghana Limited, Kenyase in Ghana. Kristiansand: The University of Adger.
- (28) Ostergren, R.C. and Le Bosse, M. (2011). The Europeans: A Geography of People, Culture, and Environment. Text in Regional Geography. Second Edition. Guilford Press.
- (29) Owen, J. R., and Kemp, D. (2012). Social License and Mining: A Critical Perspective. *Resources Policy*, 38 (1): 29-35.
- (30) Pegg, S. (2006). Mining and Poverty reduction: Transforming Rhetoric into Reality. *Journal of Cleaner Production*, 14 (3): 376-387.
- (31) Owusu, S.A., Afrifa, R.D. and Obeng, F.A. (2021). Effect of Illegal Small Scale Mining on Basic Education of Children in Rural Communities in Ghana: Perspectives for Future Development. *African Geographical Review*, 10, 2021.
- (32) Sheldon, C.G., Strongman, J.E. and Weber-Fahr, M. (2002). It's Not Over When It's Over: Mine Closure Around the World. Mining and Development Series. Washington DC: World Bank/International Finance Corporation.
- (33) Veiga, M.M., & Beinhoff, C. (1997). A Way to Reduce Mercury Emissions from Artisanal Gold Mining and Provide Badly Needed Training. United Nations Environment Programme. *Industry and Environment*, 20, 49-51.
- (34) Walker, P.A. (2006). Political Ecology: Where is the Policy? *Progress in Human Geography*, 30 (3): 382-395.
- (35) World Commission on Environment and Development (1987). Our Common Future. New York: Oxford University Press.

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