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Importance of Public Engagement in Environmental Impact Assessments (EIAs) and the Benefits of Stakeholder Involvement in Project Design, Environmental Soundness, and Social Acceptability

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Abstract

The paper discusses the importance of public engagement in environmental impact assessments (EIAs) and the benefits of stakeholder involvement in project design, environmental soundness, and social acceptability. It highlights the negative repercussions of mining activities in Ghana, including health consequences such as skin conditions, fever, coughs, diarrhea, malaria, and catarrh, as well as HIV/AIDS infection among those engaged in or connected to prostitution in mining towns. The environmental effects of mining in Ghana include noise pollution from heavy trucks, contamination of water bodies with chemicals from mineral refining, pollution of agricultural soils leading to reduced food productivity, and wildlife depletion from deforestation. The activities of small-scale miners, particularly those engaged in illicit mining, have a negative impact on water quality and increase the cost of water treatment for public consumption. Mining operations have detrimental effects on the social, cultural, and natural ecosystems in Ghana, affecting the quality of life of local communities. The study takes into consideration the impact of mining activities on the environment and natural resources in Ghana, as these are vital to the livelihoods of Ghanaian communities. Stakeholders in Tarkwa claim that mining operations have distorted the natural path of the river, leading to excessive pollution and making the water unfit for consumption. Ghana's economy depends heavily on mining, which also contributes significantly to GDP and generates jobs for a large number of

people. But mining also has a lot of negative repercussions, the effects of mining extend beyond the mineralized zone initially explored, highlighting the need to consider the environmental impact at every phase of the mining process.

Keywords

Sustainable Mineral Production, Mining, Environmental Sustainability, Environmental Impact Assessment

1. Introduction

No matter the size, mining operations negatively impact the environment even though they support the foundation of many economies in poor nations [1]. It is a factor in the indiscriminate loss of vegetation, agricultural degradation [2], and sedimentation of rivers [3]. Inadequate mining methods are mostly to blame for the environmental damage that mining activities generate. Sustainable natural resource extraction becomes a major concern with an increase in regional and worldwide mineral output; thus, there is a growing requirement for sustainable environmental management [4]. Lack of knowledge, budgetary constraints, insufficient technology, and ineffectual environmental legislation are the main causes of the environmental risks associated with mining and the health and safety consequences they have on employees and the people around them [5]. In many nations throughout the world, sustainable mineral production is crucial for the preservation of natural resources [6].

Without a doubt, the extractive sector significantly boosts the GDP (gross domestic product) of many developing nations, including Ghana [7]. Significant growth in the number of businesses engaged in the mining sector as well as in foreign direct investment (FDI) has been seen over time. As evidence for this, [8] highlights that Ghana experienced a gold rush during the previous several decades. Approximately U$2 billion in foreign direct investment (FDI) has been drawn to Ghana's mining industry, accounting for approximately 56% of all FDI in the country [9]. During the same time frame, almost 80% of the investments made in the gold mining industry alone have gone toward mine growth and expansion as well as rehabilitation. From 1.3% in 1991 to an average of 5% in recent years, the sector's GDP contribution has grown [10]. About 37% of Ghana's total exports are made up of minerals, with gold being the most valuable mineral at over 90% of all exports [8]. [11] noted and found that public engagement in environmental impact assessments (EIAs) tends to improve project design, environmental soundness, and social acceptability. The study focused on public participation and EIA in China and Taiwan. Also holding this opinion are [12]. They contend that EIAs are more likely to be successful, beneficial to the environment and society, and only result in development when a large number of stakeholders are engaged. On the other hand, not many people in Ghana are

aware that environmental initiatives require an environmental impact assessment (EIA). Public understanding and participation in EIAs are especially important in mining communities, as it protects the majority, who are typically more sensitive to potential negative environmental effects, when egress is restricted to a small privileged group. It is not unexpected to learn that mining concessions with inadequate environmental impact assessments (EIAs) typically have less control over planning and execution, which has led to greater adverse effects on communities' social and environmental conditions. Most mining operations have a detrimental effect on the social, cultural, and natural ecosystems. The majority of Ghanaian communities continue to struggle with this. According to a [13] research on auditing mining, the effects of mining begin with exploration and continue through mineral extraction, processing, and decommissioning. Furthermore, [14] emphasizes that mining operations have an environmental impact that extends much beyond the mineralized zone that was initially explored. These claims make it abundantly evident that every phase of the mining process carries the risk of producing distinct effects of varying intensities.

2. Ghana's Mining Industry and Environment

2.1. Mining's Economic Effects on Ghana

There could be as many as six million artisanal miners worldwide if one counts all mining operations in Africa and Asia [15]. Although precise numbers about the number of small-scale miners in Ghana are unknown, it is estimated that roughly 100,000 Ghanaians are mining lawfully [7]. The mining industry is Ghana's largest source of foreign exchange earnings, contributing 41% of the nation's total foreign exchange earnings. Gold has displaced cocoa as Ghana's main source of foreign exchange earnings, accounting for approximately US $600 million and 90% of total mineral productivity yearly [8] There are various advantages to increased mining sector investments brought forth by Ghana's economic reforms. The nation's main source of foreign exchange earnings is mining, which also contributes significantly to community development in mining areas, generates a significant amount of government revenue, and gives people a means of subsistence and social infrastructure [16]. Mining also creates direct and indirect employment opportunities.

2.2. Ghanaian Mining's Effects on Health

Ahern and Stephens claim that mining is still one of the riskiest jobs in the world in terms of potential short- and long-term injuries and fatalities as well as respiratory illnesses like pneumoconiosis, asbestosis, and silicosis [17]. A "galamsey" pit along the Ofin River collapsed, burying several people, devastating the residents of Dunkwa-on-Offin in the central region [18]. That one accident claimed the lives of almost 100 miners. According to reports, on June 27, 2010, 136 "galamsey" machinists were employed in the pit at the time of the event. The rescue

effort, hindered by rushing water from the Ofin River, retrieved roughly thirteen bodies. In the Ashanti Region, at least 12 "galamsey" operators were stranded in a collapsing hole in Attaso, which is close to Kotokuom. From the pit, nine bodies were recovered. According to Dr. Amoako Atta, chief of the renal section of the Komfo Anokye Teaching Hospital, there has been a rise in kidney disease cases, and one contributing factor is the use of mercury by illegal miners [19]. This was published by the Ghanaian Times. Mercury is found in the environment because it is used in the gold recovery process, where the inorganic form of the metal is either easily evaporated into the atmosphere or washes into rivers, according to a study done by the Centre for Environmental Impact Analysis. The levels of mercury detected in fish were three times greater than those that the US Environmental Protection Agency (USEPA) considered safe. Furthermore, the skin and the entire body may be harmed by the pollutants in the river. Mercury has an impact on the respiratory system, gastrointestinal tract, neurological system, and kidneys [19]. Five tons of mercury are reportedly discharged annually by Ghanaian small-scale mining operations, according to one source. Residents of five settlements in the Obuasi Municipality—Sanso, Anyinam, Anyinamadokrom, Abombe, and Tutuka—suffer from malaria, skin conditions, diarrhea, fever, colds, and catarrh as a result of mining activities close to AngloGold Ashanti's operations. About 42% of the disorders reported in the survey were caused by malaria, with respiratory infections coming in second at 27% and skin diseases at 17.7% [20]. In the study area, 13.6% of the respondents reported having a fever, diarrhea, and other symptoms. Anyinam, which is extremely close to AngloGold Ashanti's open pit site where rock blasting and top soil removal with large machinery are common, had the highest frequency of colds or coughs (37.1% of respondents). The majority of workers and residents reporting skin problems were from Anyimadokrom (26.6% of replies) and Sanso (24.3% of responses). Respondents at Sanso observed that a major factor contributing to the occurrence of skin illnesses was chemical contamination of water bodies, which some inhabitants depend on for food, water, and other household needs. Anyimadokrom's high rate of skin illnesses is a result of its close vicinity to AngloGold Ashanti's Pompola treatment plant, which uses chemicals including arsenic (sulfur dioxide) in its operations [20]. Apart from malaria, the incidence of other illnesses such colds or coughs, skin conditions, fever, and diarrhea was comparatively low at Abompe and Tutuka, which are situated roughly 1.5 - 3 km away from active mine sites. This can be explained by the distance between the two locations and the active mine sites. As evidenced by the greater frequency of Buruli ulcer in the Amansie West District and the endemic nature of the disease in communities close to mining activities, artisanal and small-scale gold mining (ASGM) may be a risk factor for Buruli ulcer in Ghana [21]. In a case-control study conducted in Ghana, an increased risk of infection was not linked to direct mining participation or contact with mine pit water; however, land use changes, such as streambed disturbances, that frequently accompany ASGM activities have been suggested as a mechanism for the spread of Buruli ulcer. According to

a study by Amposah-Tawia and Dartey-Baah, the majority of Ghanaian mining towns are home to a large population of commercial sex workers. Some of these workers come to these areas in quest of employment, and when they can't find any, they become prostitutes as a last choice [21]. Because of the increased prevalence of sex trafficking in the area, their study found that the Wassa West District had the greatest number of cases of HIV in the Western Region. The large concentration of mining enterprises in the area could be one reason for this higher prevalence. ASGM populations may be more susceptible to HIV/AIDS and other sexually transmitted illnesses due to sociocultural and socioeconomic reasons discussed in earlier sections as well as in the social sciences and economics review. Cannabis and cocaine are two illegal substances that are frequently used as stimulants by employees to let them to work longer and harder. This is especially true for AGSM miners in Ghana [20]. Hearing loss and silicosis are two more health and social effects of mining activities. These disorders are brought on by blasting and drilling activities, which produce dust and noise that irritate people in mining districts. When a piece of land collapsed on sixteen "galamsey" operators, including two women at Kyekyewere, near Dunkwa, the Ghana News Agency stated that the operators were confirmed dead [21]. It was thought that they disregarded advisories to avoid a mining site that was undergoing remediation. In Ghana, many hundred miners have lost their lives as a direct result of unsafe working conditions and unregulated excavation at illicit mining enterprises.

3. Effects on the Environment and Associated Health Effects

Since Ghanaian communities depend heavily on the environment for their livelihoods, the country's environment and natural resources are vital to the country's people. Since land, agricultural, water, air, and noise pollution have a significant impact on Ghanaians' quality of life, these environmental effects and natural resources were taken into consideration in this study to evaluate the effects of mining activities in Ghana.

3.1. Pollution of Water

Water contamination from mining waste dumped into the environment, seepage from tailings and waste rock impoundments, and the extensive water demand in ore processing are all ways that mining has an impact on freshwater resources. The harm posed by human activities like mining to water supplies is growing. There is growing awareness of the environmental impact of mining activities that have been done with little or no concern for the environment. Water has been labeled "mining's most common victim." Water supplies are naturally consumed, diverted, and severely contaminated by mining. Acid mine drainage, heavy metal contamination and leaching, chemical processing pollution, and erosion and sedimentation are the four primary ways that mining affects the quality of water [22]. Eleven research from Ghana were examined, all of which unequivocally showed how contamination of water bodies affects the ecosystem

and public health. Additionally, there is compelling evidence of arsenic and mercury pollution in biotic and abiotic samples found close to Ghanaian mining sites. Water supplies in the Obuasi Municipality have been seriously jeopardized, according to studies. The majority of streams, rivers, and other bodies of water are either completely dry or contaminated with chemicals. The Obuasi municipal development report states that mining and other human activities have contaminated all major streams and rivers, including Kwabrafo, Pompo, Nyam, Jimi, Akapori, Wheaseammo, and Kunka. Yeboah's interview with an agricultural extension officer states that there is no fishing in the Kwabrafo River because all fish species have perished as a result of toxification. Concerns have also been raised over the upkeep and caliber of the water that is pumped out of these boreholes. For example, the people in Sanso and Abompe claimed that the water pumped from the borehole was of low quality and that subterranean chemicals may have contaminated the water. Small-scale miners typically work along riverbanks, eroding them and increasing the likelihood that they would overflow during periods of intense precipitation. Communities around mines have recently experienced floods as a result of this circumstance. Uncontrolled water flow destroys property and lives when it enters nearby homes and surroundings. Most rivers and streams are diverted from their natural routes, and in certain cases completely blocked, to accommodate mining operations. Although stream diversions in official large-scale mining sites incorporate environmental factors, it's unclear how much of these factors are taken into account [23]. Development may need some stream diversions, but it is important to examine factors including the greatest likely flood occurrence, the size of the diversion channel, and flow issues. The aforementioned standards are not rigorously governed or implemented, and small-scale miners' diversions are spontaneous and unplanned. Stakeholders in Tarkwa claim that mining operations near the river have significantly distorted the river's natural path. According to a key informant from the Ghana Water Company near the Bonsa intake locations, "the soil is heavily scooped and processed for gold, after which debris is abandoned in and around the river," some stakeholders linked this to illicit mining activities. The replies stated that this was not always the case, although it was also noted that the river had an impenetrable brown tint. Due to the water's pure hue, several of the locals near the river asserted that, prior to the illicit mining operations along the river, farmers used to drink the water straight from the river without treatment [24]. Moreover, rising impurities imply rising turbidity, which lowers the pH of river water. According to [25], a decrease in pH regulates causes a variety of aquatic processes, including the dissolving of metal oxides. There's a suggestion that the river's raw water constantly drops in pH, which allows the oxides of certain metal elements to enter the stream and dissolve. A report on the "Human Health Risk Assessment and Epidemiological Studies from Exposure to Toxic Chemicals" in the Ghanaian districts of Tarkwa-Nsuaem Municipality, Prestea Huni Valley District, and Cape Coast Metropolis was released in 2011 by the Centre for Environmental Impact Analysis. This study discovered that residents

in the Tarkwa-Nsuaem Municipality and Prestea Huni Valley District had higher levels of certain toxic chemicals in their whole blood and blood serum when compared to residents in the Cape Coast Metropolis. These elevated levels were caused by oral ingestion, dermal contact with water and soil/sediments samples, and oral ingestion of cassava contaminated with elevated levels of these toxic chemicals. Regrettably, the local inhabitants along these river segments are no longer able to depend on the water from the Pra, Ankobra, Birim, and other water bodies due to their excessive pollution. Due to concerns about food security and water availability, countries with low human development indices (HDI) prioritize water for agriculture over domestic water supplies.39 the activities of small-scale miners, particularly those engaged in illicit mining, have an impact on water quality and raise the cost of water treatment for water companies that treat the water for public consumption. Sometimes the pollution is so bad that it takes a lot of chemicals to purify the water. This could lower the quality of the water that the public receives, leaving water businesses with little choice but to close. A study conducted at Datuku, Talensi-Nabdam District, revealed that the turbidity levels in water samples from drinking water sources varied from 1 nitrite-nitrogen turbidity in the Accra borehole to 447 nitrite-nitrogen turbidity midstream. The World Health Organization (WHO) maximum permissible criteria for drinking water quality were surpassed by the average level of turbidity at all monitoring stations in 2008. Surface water turbidity was caused by runoff and waste water from gold mining. Rock weathering-related inorganic particle debris may be the source of turbidity in groundwater. According to the study, the electrical conductivity of the water samples from Datuku ranged from 204 to 1565 μS/cm, with the Accra borehole having the lowest value (204) and the Accra abandoned pit having the highest value (1565). This can be attributed to the dissolved minerals from adjacent mining operations in the water.40 Electrical conductivity (EC) is a useful tool for detecting the presence of contaminants like sodium, potassium, chloride, or sulfate, but it does not reveal the presence of any particular element. Ninety-six percent of the 200 respondents in East Akim, according to Mihaye, stated that small-scale mining had a significant impact on local water bodies, while four percent believed it had no effect at all. According to participant comments, the municipality's water resources are seriously harmed by small-scale mining. Humans, fish, and other aquatic creatures are seriously threatened by the miners' use of toxic chemicals like cyanide and mercury.

3.2. Depletion of Agricultural Resources and Loss of Agricultural Land and Vegetation

Andre and Gavin contended that although gold mining benefits the national economy overall in Ghana, local populations deal with a variety of social and environmental issues, such as the loss of farmland. According to respondents surveyed in five settlements within the Obuasi Municipality, one of the main consequences of surface mining is the destruction of the land. Firstly, the ground

becomes infertile and useless for agriculture when top soils, trees, and other vegetation are removed using large machinery, depriving the land of its nutrients. For example, at Sanso, there were areas where the presence of rocks and other debris from mining activities had impeded plant growth and prevented farming from occurring. Respondents also complained that mining activities created pits and heavy holes/trenches, which made these areas dangerous for the locals to access. This problem was verified by field observations, which revealed trenches between 50 and 75 meters deep in Anyinam and Binsere. Even in cases where these pits were backfilled, the result was either the conversion of the pits into tailings dams, where waste and other harmful items are dumped, or their covering with rocks, rendering the area unusable. According to Opoku-Ware, the surrounding area has been impacted by mining operations carried out by the Newmont Company, particularly the excavations in Kenyasi. Similar circumstances were discovered in Tarkwa, where "the huge scale of excavation has led to a complete change of land form suitable for agricultural and any other livelihood activity." In Kenyasi, a significant portion of arable and farm lands have been set aside for mining in the future by the local mining firm, even though not all of the surrounding land has been impacted by mining activities. The majority of farmers whose stories were told had lost their farms to mining. Only a small number of areas are mined by the Newmont Company, but even in those regions, significant pits have been dug and excavations made. Huge tracts of land that are unusable for any other reason are covered with mounds of sand from the three major pits that Newmont has dug out. In many areas of Kenya, there is extreme land degradation, and gold is being mined arbitrarily by illegal miners. According to the report, their actions lead to the devastation of land resources since they are not supported by any expert evaluation of rocks and soil that contain gold. When comparing illicit mining sites in Kenyasi to Newmont Company concession sites, one can see how seriously and frequently the land is degraded. However, because of this concessionary approach, locals frequently turn to illicit mining as a means of making up for lost territory. The total agricultural land lost as a result of large-scale gold mining in the Tarkwa, Bogoso/Prestea, and Damang concessions is 4935 hectares, or 25.5% of the total agricultural land in Bogoso/Prestea and Damang and 5% of the total agricultural land in the Tarkwa Nsuaem municipality. Approximately 31,237 square kilometers of Ghana's land area (13.1%) is under concession to mining companies. 4935 hectares is the equivalent of 45.42% of the total acreage under the concessions. Even though as of 2002 30.63% of the land in these three concessions was still used for agriculture, it is under risk from further mining operations. An analysis by [26], 46 of 4379.93 hectares of the Bogoso/Prestea concession during a 20-year period (1986-2006) where land use changes have occurred verifies the trend of declining agricultural land as mining-related activities rise at the concessions. The amount of land used for agriculture fell by 15.45%, or 661.54 hectares, between 1986 and 2006. The reason for this was the conversion of 325.83 hectares into mining operations (mine pits and waste dumps) and 335.71 hectares into other land uses,

such as highways and villages to support mining operations. With the largest share of the labor force employed and an estimated 30% GDP contribution in 2012, agriculture is the most significant economic sector in all of Africa. The amount of food produced domestically in the Obuasi municipality falls short of what is required for the entire region. Since the area's cropland has either been deteriorated or set aside for mining operations, respondents blamed mining activities for this. Heavy machinery used to dig for gold resources has removed top soils, trees, and other vegetation, degrading the land in the process. Because of this, the soil has lost all of its nutrients and is no longer suitable for farming. As a result, there is currently limited farmland available for farming operations. Due to mining operations, a large portion of the land that is still usable has chemical contamination. It was revealed during a conversation with a representative of the Ministry of Food and Agricultural Directorate in Obuasi that surface mining had left farming area contaminated with arsenic and cyanide. These lands are now unproductive and are not utilized for such purposes. Communities in Sanso, Apetikoko, Dokyiwa, and Ahansonyewode are among those impacted. Apart from the Yeboah study, tailings dams encompass significant areas of land in towns like Binsere, Kokoteasua, Abompe, and so on. These assertions were validated by field observations.

Farmers who are displaced typically find new property by renting it out or cutting down surrounding trees. Farmers' landholding status, farm size, and production may suffer even if they are able to purchase alternative land. Farmers who were once landlords may find themselves in a scenario where they are forced to cultivate smaller farmlands due to the loss of their farmlands. Access to farms is a challenge for farmers in the Teberebie hamlet due to the waste rock dump that is eating farmlands. To get to their farms, some farmers had to walk up to nine kilometers. Some who are able to pay for public transportation take taxis to their farms, but they only do this once or twice a week because of the expense of transportation. 48 respondents (32%) to a different research on the effects of the Chirano gold mines on the neighboring villages stated that the company's operations made it impossible for them to deliver farm produce to their houses by blocking access to their farms. Farmers' production may suffer from long commutes to farms because they get more exhausted and have less time to cultivate the field. Research has indicated a favorable relationship between agricultural productivity and labor productivity.49 Lower labor productivity might have a negative impact on crop yields and productivity. Farmers also face the challenge of long-distance farming produce transportation to homes.

3.3. Air Disturbances

According to Opoku-Ware, the primary source of air pollution in the Kenyasi village is the unpaved, dusty roads that Newmont's heavy-duty trucks frequently use to deliver machinery and other equipment to the mine sites. At the mine site, chemical gases, fumes, and smoke are not easily visible, but dust fills the air for a while when blasting occurs. The neighborhood is not allowed to use rainwater,

and chemicals used in the blasting process are also released into the atmosphere. While Newmont has reacted to complaints about dust and unpaved roads causing air pollution by sporadically misting water on the roads, this is not a regular practice. The majority of respondents reported that the situation was associated with a rise in respiratory illnesses, including the flu and cold (catarrh). Additionally, it was mentioned that "all fine dust at a high level of exposure has the potential to cause respiratory diseases and disorders and can worsen the condition of people with asthma and bronchial stiffness".

3.4. Pollution by Noise

The majority of Ghanaians did not view noise as a type of pollution until recently. However, local officials have become aware of it because of the inconvenience it causes to residents. At the moment, most businesses that use heavy machinery are subject to noise pollution laws, and machinery noise emission levels are continuously monitored. But noise coming from the actual Newmont plant site is little. The majority of the noise pollution in the community is caused by blasting at the mining site. The noise is so intense that it is easy to see fractures in most of the community's buildings and constantly shakes the foundations of Kenyasi homes. The Newmont Company's heavy-duty trucks are a significant contributor to noise pollution in Kenyasi. Residents have expressed dissatisfaction about these trucks' loudness, which they claim is annoying and is ruining the area's few tarred roads. Opoku-Ware further stated that because heavy duty vehicle traffic is regular, residents of the neighbourhood are more bothered by the noise from these trucks than by the blasts. Numerous procedures and pieces of machinery used in ASGM may cause noise pollution to surrounding towns and miners. During the excavation process, the use of dynamite can result in significant noise exposures, and the prolonged usage of shovels and picks can provide less significant but potentially significant exposures as well. While manual processing with a mortar and pestle is likely to result in smaller exposures, ore processing utilizing generator-powered grinding equipment can include significant noise exposures. Of the 59 members of an ASGM community in Nicaragua, 21 (35%) had noise-induced hearing loss (NIHL). 52 these findings suggest that ASGM miners may be significantly at risk of NIHL. A study conducted on 252 miners at a large-scale gold mining firm in Ghana reported that 59 (23%) had NIHL. Three of the five enterprises in the research had mean hearing threshold levels of more exceeding 25 dB, according to a quarry center study. NIHL issues were reported by more than 25% of respondents at these organizations, with employees at the KAS quarry reporting the highest prevalence. The type and quantity of noise-generating machinery employed in the various quarries may be the reason for the substantial correlation observed between the diverse working environments and hearing threshold level. When the extent of hearing loss among respondents with a hearing threshold level more than 25 dB was analyzed, the results showed that, correspondingly, 75%, 18%, 5%, and 2% had mild, moderate, fairly severe, and severe hearing loss. This demonstrates the high frequency of ear damage

among employees in extremely noisy settings, such as quarries, and the necessity of putting in place the right measures to reduce this risk.

4. Ghana's Approach to Handling the Health and Environmental Effects of Mining

In order to reduce the risks that mining poses to the environment and public health in Ghana, Mihaye suggests the following measures: 1) Cooperation between government agencies; in order to address the complex issues facing the mining industry, an integrated strategy involving all pertinent parties is required; and 2) Formation of associations for small-scale miners; these associations should engage in regular communication with all parties involved in the mining industry. Representatives from each of the municipality's traditional councils should be involved in this; 3) The different assemblies are required to offer alternative sources of treated drinking water to the impacted communities. In order to stop more pollution of the surrounding rivers, miners should also be prohibited from mining near sources of water. In order to lessen the negative effects of small-scale mining on the health of mining communities and the surrounding environment, this calls for the strict implementation of the mining laws to ensure that proper mining procedures are followed; 4) Education on environmental and health hazards. Community members need to be educated on environmental and health effects, such as water pollution and land degradation caused by mine operations.

5. Conclusion

Ghana's economy depends heavily on mining, which also contributes significantly to GDP and generates jobs for a large number of people. But mining also has a lot of negative repercussions, which are listed here. Communities that are close to mining sites are more susceptible to skin conditions, fever, coughs, diarrhea, malaria, and catarrh. HIV/AIDS infection among those engaged in or connected to prostitution in mining towns is another health consequence. The environmental effects include heavy trucks from mining centers producing noise pollution, chemicals from the refining of mined minerals contaminating water bodies with arsenic, mercury, and cadmium, heavy metals and other pollutants contaminating agricultural soils that lead to a reduction in food productivity due to infertile land, and wildlife depletion from clearing forests that are home to numerous animal species.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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