



## SOCIOECONOMIC BASELINE SURVEY ON SMALL-SCALE MINING ACTIVITIES IN THE EASTERN REGION.

# Report

### **SERVIR WEST AFRICA ILLEGAL MINING MONITORING SERVICE**

Prepared By

Centre for Remote Sensing and Geographic Information Services (CERSGIS)

University of Ghana,

Legon, Accra,

Ghana.



SERVIR  WEST AFRICA



## Acronyms and Abbreviations

CERSGIS	Centre for Remote Sensing and Geographic Information Services
SSM	Small- Scale Mining
Kolikoli	Local gold extraction practice
EO	Earth Observation
Galamsey	Local term for small-scale mining
A Rocha Ghana	Partner - Non-Governmental/Non-profit organization

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# EXECUTIVE SUMMARY

- Summary of Key Findings

# 1 EXECUTIVE SUMMARY

## 1.1 Summary of Key Findings

The socio-economic survey on small-scale mining in the Eastern Region of Ghana specifically Atiwa East, Atiwa West and Fantekwa South, covered the following communities; Bomaa, Bansa, Apampatia, Awenare, Pameng, Gyedam (Ankaase), Osino, Nsuapemso, Akyem Mampong, Nsutem, Dwenase, Abompe, Muoso, Akrofofo and Anyinam. The survey uncovered various significant findings:

### Environmental Challenges

Small-scale mining, both legal and illegal, has been a major source of environmental degradation. Pollution of water bodies, land degradation, and deforestation have adverse consequences for the local environment and sustainability.

### Gender Dynamics and Economic Activities

Gender dynamics within small-scale mining reveal a complex interplay of roles and responsibilities. While women's marginalization is a salient issue, the overall picture greatly involves men and children. Economic activities in these communities revolve primarily around mining, farming, and trade.

### Legal Framework and Compliance

Existing legal frameworks regulating small-scale mining are often overlooked, particularly by 'galamsey' operators who operate without permits or within large-scale mining concessions. This non-compliance exacerbates the environmental issues.

### Impact on Livelihoods

The dominance of mining activities, especially 'galamsey,' has had a significant impact on local livelihoods. Farming and other economic activities have taken a back seat, contributing to economic vulnerability among community members.

### Role of Traditional Authorities

Prominent traditional leaders, often referred to as chiefs, have historically held significant influence over the regulation of mining activities. However, their authority has gradually eroded due to the absence of comprehensive regulations from the Minerals Commission, which mining concession companies are expected to adhere to. This has resulted in a three-way conflict between traditional leaders, mining companies, and the Minerals Commission.

### Foreign Involvement

The presence of Canadian and Chinese citizens engaged in small-scale mining adds a layer of complexity to the sector, as they are often associated with a major part of environmental degradation and illegal activities.



## Hierarchy of Actors

Small-scale mining operations have a hierarchical structure, with mining concessions, site owners, operators, foremen, gang leaders, and by-day labourers. The 'kolikoli' group, primarily composed of men, women and children, occupies a relatively obscure position within this hierarchy.



# INTRODUCTION

- Background and Context
- Objectives of the Study
- Methodology

## 2 INTRODUCTION

In the Eastern Region of Ghana, the landscapes harbor an industry of profound significant small-scale mining activities. The Atiwa East, Atiwa West, and Fantekwa South districts, intricately intertwines a tapestry of challenges and dynamism, exerting its influence not only on the local terrain but also permeating through the social and economic fabric of the region.

As we embarked on this comprehensive study, our goal was to unravel the layers of complexity surrounding small-scale mining. Known colloquially as "galamsey," this industry plays a pivotal role, but it is not without a lot of challenges and consequences. Through the process of research, data collection, and analysis, we sought to cast a light on these complexities and provide invaluable insights for a more sustainable and equitable future.

The miners of this region, men and women of diverse backgrounds, often consider 25 acres as the equivalent of a concession, a plot of land that sustains them for several years. This stark notion underscores the lasting impact of their activities. In addition, we discovered that alluvial mining, particularly on water bodies, is often driven by non-Ghanaians, who, at times, operate with the permissions of the minerals commissions and some local authorities. This introduces an element of sponsorship and authority that shapes the industry.

The faces in this industry are also international, reflecting a global blend. Foreign nationals, hailing from China, Senegal, India, Benin, Mali, and various corners of the world, converge here in the quest for mineral wealth. This mix paints a picture of global participation in a local endeavor.

In the midst of all these complicated issues, some miners we spoke to had a unique suggestion. They proposed that the government should take the excavators they seize from illegal miners and let responsible small-scale miners use them. This could help the economy and make sure rules are followed. But there's a catch - sometimes, the military gets involved in this process and they might expect money in return, which makes things even more complex.

Diverse perspectives came to light during our exploration. Some miners opined that climate change, often attributed to their activities, is primarily caused by industrialization in the Western world and not necessarily the actions of small-scale mining. This viewpoint underscores the global environmental implications of small-scale mining. Others expressed frustration with the cumbersome and corrupt process of obtaining licenses, leading them to opt for bribery, thus bypassing official channels.

The role of traditional leaders, known as chiefs, in regulating mining activities is in a state of flux, with their influence diminishing due to the absence of comprehensive regulations from the Minerals Commission. This power vacuum has spawned a three-way struggle among traditional leaders, mining companies, and regulatory bodies. Meanwhile, mining is contributing to the degradation of arable land, leaving farmers uncompensated and their crops destroyed, threatening local food security.

More and more young people are getting into mining because they don't have jobs. This is making the local economy and society even more connected to the mining industry. But there's a problem - people

tend to pollute the environment (mainly dumping plastic wastes into abandoned mining pits). This is a situation that wasn't common a few years back because farmlands were secure.

In the midst of these interconnected challenges and dynamics, a farmer's suggestion resonates - the need to increase cocoa prices to dissuade land sales to miners. It's a reminder that the solutions may not be found in isolation but require a holistic understanding of this complex industry.

This report delves into the heart of small-scale mining in the Eastern Region of Ghana, seeking to uncover the different dimensions of the mining industry that resonates far beyond the immediate surface. With the findings and insights contained within, we aim to uncover the reality of the socio-economic situations present within these mining communities and bring to light a sustainable, equitable, and harmonious future for both the environment and the communities that depend on it.

## **2.1 Background and Context**

Small-scale mining, often referred to as "galamsey," has been a prevalent activity in Ghana for decades. In the Eastern Region, numerous communities, including Bomaa, Bansa, Apampatia, Awenare, Pameng, Gyedam (Ankaase), Osino, Nsuapemso, Akyem Mampong, Nsutem, Dwenase, Abompe, Muoso, Akrofofo, and Anyinam, have been at the center of this industry. The region's geological characteristics have made it conducive to small-scale mining, attracting a diverse range of actors, including local inhabitants and foreign nationals.

This study is prompted by the critical need to understand the various dimensions of small-scale mining and its impact on the environment, communities, and the overall socio-economic fabric within Eastern Region. It is important to note that while there are legal frameworks in place to regulate mining activities, the enforcement of these regulations has often been lax, contributing to both environmental degradation and the undermining of local livelihoods.

## **2.2 Objectives of the Study**

The primary objectives of this study are as follows:

- To assess the environmental challenges posed by small-scale mining, including pollution, land degradation, and deforestation.
- To examine the gender dynamics within the small-scale mining sector, highlighting the roles and responsibilities of men, women, and children.
- To investigate the compliance with legal frameworks regulating small-scale mining and understand the challenges related to obtaining licenses.
- To analyze the impact of small-scale mining on the livelihoods of local communities, including the dominance of mining activities and its consequences.
- To explore the role of traditional authorities, chiefs, in regulating mining activities and the erosion of their authority.
- To understand the complexities of foreign involvement, particularly the presence of Canadian and Chinese citizens in small-scale mining.

- To unravel the hierarchy of actors within small-scale mining operations, from concession owners to laborers.

## **2.3 Methodology**

This study is based on a comprehensive methodology that includes both qualitative and quantitative research methods. Data collection was carried out through surveys, interviews, and on-site observations within the study areas. A cross-section of small-scale miners, community members, traditional authorities, and experts in the field of mining were engaged to gather insights and perspectives. Furthermore, a detailed review of existing literature and regulations on small-scale mining in Ghana was conducted to provide a well-rounded analysis.



# Literature Review

- **Small-Scale Mining and Its Importance in the Eastern Region**
- **Socio-Economic Impact of Small-Scale Mining in the Eastern Region**
- **Environmental Implications**
- **Legal and Regulatory Framework**

## **3 LITERATURE REVIEW**

### **3.1 Small-Scale Mining and its importance in the Eastern Region**

Small-scale mining holds a prominent and complex role in the Eastern Region of Ghana. The industry weaves itself into the very fabric of this region, and its importance is multifaceted. For many, it represents not only a means of livelihood but also a way of life. The Eastern Region's geological characteristics have made it a fertile ground for small-scale mining. Its terrain is rich in mineral resources, particularly gold, which has drawn a diverse range of actors, both local and foreign, to engage in this industry. Mining concessions, sometimes as small as 25 acres, sustain families for several years, emphasizing the lasting impact of these activities.

The essence of small-scale mining goes beyond the immediate surface, affecting the social and economic landscape of the Eastern Region. The practice is deeply ingrained in the communities, impacting not only on the environment but also on the livelihoods of the local population. Miners, hailing from diverse backgrounds, contribute to the socio-economic dynamics in ways that extend far beyond the confines of mining pits.

### **3.2 Socio-Economic Impact of Small-Scale Mining in the Eastern Region.**

Small-scale mining has left a mark on the socio-economic landscape of the Eastern Region. This sector plays a pivotal role in the lives of many, with consequences that ripple through the communities, influencing individuals of all ages and backgrounds. One of the most notable impacts is economics. Mining activities, particularly 'galamsey,' dominate the economic activities in these communities. While this provides income for many, it has also led to the sideline of traditional livelihoods, such as farming, trade, and other economic pursuits. As a result, communities have become economically vulnerable, relying heavily on the often-uncertain fortunes of mining.

Another significant aspect is demographic composition. It's not just adult men who are engaged in mining; women and even children are drawn into this industry. Gender dynamics within small-scale mining reveal a complex interplay of roles and responsibilities, with women's marginalization being a prominent issue. The overall picture greatly involves women and children, underscoring the deep integration of mining into the social structure.

The impact also extends to education and literacy. This survey reveals that a substantial portion of respondents have limited educational backgrounds, emphasizing the need for targeted literacy interventions. This is crucial for personal development and access to better economic opportunities beyond mining.

### **3.3 Environmental Implications**

Small-scale mining, whether legal or illegal, has cast a long shadow of environmental degradation across the Eastern Region. The consequences are profound, affecting water bodies, land, forests, and they have far-reaching implications for the local environment and sustainability. Pollution of water bodies is a pressing concern. The chemical and waste products of mining operations often find their way into rivers and streams, contaminating the water supply and posing a serious threat to both aquatic ecosystems and human health. This pollution is not localized; it can have cascading effects downstream, affecting larger communities. Small-scale mining heavily relies on water for its washing processes. Unfortunately, this practice has severe repercussions as it results in the pollution of nearby streams and water bodies. The extensive use of water in galamsey operations, particularly for washing and separating minerals, leads to the release of pollutants and contaminants into natural water sources. "Illegal gold mining (galamsey) continues to be a threat to forest and water resources in Ghana. Even though galamsey is not new in Ghana, the use of heavy machines such as excavators and bulldozers, and chafans are a recent phenomenon causing destruction to forests, farmlands and river bodies" (Yeboah, 2022). Consequently, this pollution seriously compromises the quality and purity of the streams, which are not only essential for aquatic life but also serve as important sources of water for nearby communities. The environmental consequences of galamsey are closely intertwined with its water-intensive nature, making water pollution a central concern in this context.

Land degradation is another prominent issue. Mining activities result in the excavation and removal of vast quantities of earth, altering the natural landscape. These scars on the land can persist for years, if not decades, affecting the region's ability to support agriculture and other land-based activities. Deforestation compounds the environmental challenges. As mining operations expand, they encroach upon forests, leading to the loss of vital ecosystems and exacerbating climate change. The consequences of this deforestation go far beyond the local communities, contributing to the overall environmental concerns.

### **3.4 Legal and Regulatory Framework**

The legal and regulatory framework governing small-scale mining in the Eastern Region of Ghana is a critical factor that shapes the industry's dynamics. However, it is a double-edged sword, with both potential benefits and challenges. Existing legal frameworks are in place to regulate mining activities. These regulations are designed to safeguard the environment and ensure that mining is conducted responsibly. While these laws provide a basis for proper mining practices, their enforcement has often been lax. This lax enforcement has contributed to environmental degradation and the undermining of local livelihoods. One of the major challenges is the non-compliance with these regulations, particularly by 'galamsey' operators. These individuals often operate without the required permits or within large-scale mining concessions, exacerbating environmental issues. The lack of strict compliance can be attributed to various factors, including corruption, bureaucracy, and a cumbersome licensing process.

In essence, the legal and regulatory framework is a critical component of the small-scale mining industry in the Eastern Region. Its effectiveness depends on the enforcement of regulations and the willingness of all stakeholders, including the minerals commissions, miners, and regulatory bodies, to adhere to the laws in place. Balancing the economic benefits of mining with the need for environmental protection is a complex challenge that the region must address to ensure the sustainability of small-scale mining.



*Seventy-four percent (403 respondents), identified solely as Miners. This indicates that mining is a primary occupation for a significant majority of the respondents involved in mining activities.*



# Small-Scale Mining in Eastern Region

- Overview of Small-Scale Mining Activities
- Demographics of Small-Scale Miners

## 4 SMALL-SCALE MINING IN EASTERN REGION

### 4.1 Overview of small-scale mining activities

Small-scale mining, commonly known as "galamsey," has been a prominent economic activity in the Eastern Region of Ghana, particularly in districts like Atiwa East, Atiwa West, and Fanteakwa South. The region's geological features make it conducive for small-scale mining, attracting a diverse range of actors, including local inhabitants and foreign nationals. These mining activities are primarily focused on the extraction of gold and other valuable minerals.

The significance of small-scale mining in the local economy is undeniable, providing a source of livelihood for numerous residents. This sector, characterized by a hierarchical structure involving mining concessions, site owners, operators, foremen, gang leaders, and laborers, plays a crucial role in both legal and illegal activities. Legal small-scale mining, subject to regulation, coexists with illegal mining practices, commonly referred to as "galamsey," which occurs without permits and often within large-scale mining concessions, intensifying environmental challenges. Mcquilken and Hilson highlight that the enforcement problem is exacerbated by the "inadequate financial, personnel, and logistical capacity of state regulators," while Teschner notes that a lack of information further contributes to the issue. Miners and operators in the informal sector, lacking knowledge of the institutions and legal requirements governing the subsector, also face a deficit in basic technical skills required for sustainable mining. Hilson emphasizes the overall "low environmental awareness within the sector." Moreover, the involvement of foreign nationals, including Canadians and Chinese citizens, adds a layer of complexity to the small-scale mining sector, with some contributing to environmental degradation and engaging in illegal activities (Mcquilken & Hilson, 2012; Teschner, 2018).

### 4.2 Demographics of Small-Scale Miners

The small-scale mining community in the Eastern Region exhibits a variety of demographics:

**Gender Dynamics:** Mining activities involves men, women and children, with women often playing marginalized roles. However, the overall picture indicates significant involvement of men and teenage children in various mining tasks.

**Age Groups:** Small-scale mining attracts individuals across different age groups, with a substantial proportion being young people. Most respondents were under 50 years of age, indicating that many young individuals are getting involved in mining, often due to limited job opportunities in the region.

**Indigene Status:** A significant portion of the respondents identified themselves as indigenes of the mining communities, while others were non-indigenous, hailing from various regions within Ghana.

**Education Levels:** Respondents had low educational backgrounds, with a range of education levels, from no formal education to secondary education. This diversity highlights the need for tailored interventions related to education and literacy.

**Occupations:** Mining is the primary occupation for a substantial number of respondents. However, some individuals combine mining with farming, business ownership, and other economic activities, reflecting the multifaceted nature of their livelihoods.

*These demographic factors provide a picture of the individuals involved in small-scale mining in the Eastern Region, offering insights into their backgrounds and roles within the sector. Understanding these demographics is essential for crafting effective interventions that address the unique challenges and opportunities associated with small-scale mining in the eastern region.*



# Socio-economic Survey

- **Survey Design and Sampling**
- **Data Collection Methods**
- **Sample Characteristics**
- **Data Analysis**
- **Summary**

## 5 SOCIO-ECONOMIC SURVEY

### 5.1 Survey Design and Sampling

The socio-economic survey conducted in the Eastern Region of Ghana aimed to provide an in-depth understanding of the socio-economic impacts of Artisanal and Small-Scale Gold Mining (ASGM) on the surveyed communities. The survey was meticulously designed to capture a comprehensive view of the challenges faced by these communities due to mining activities and the extent of environmental degradation caused by ASGM.

The survey design involved a structured questionnaire that incorporated both quantitative and qualitative elements. It was designed to gather information from a diverse range of respondents, including small-scale miners, community members, traditional authorities, and trained laborers in the field of mining. The questions were carefully crafted to elicit responses on topics related to environmental consequences and food security, allowing for a nuanced analysis of the issues.

Sampling was conducted across 15 communities in the Eastern Region, including communities like Akyem Mampong, Akrofofo, and Ankaase (Gyedam). The selection of these communities aimed to provide a representative view of the socio-economic and environmental dynamics associated with ASGM in the region. The survey utilized a cross-sectional approach to engage with a diverse group of respondents and capture a broad spectrum of perspectives.

### 5.2 Data Collection Methods

Data collection for the survey involved a combination of methods, including surveys, interviews, and on-site observations. This multi-faceted approach was chosen to ensure a robust and comprehensive data collection process.

Surveys: Structured surveys were administered to gather data on a range of topics, including land degradation, deforestation, water pollution, soil infertility, loss of biodiversity, and the perceptions of respondents regarding the environmental impact of ASGM. Survey responses were

**This survey in Ghana's Eastern Region utilized a structured questionnaire across 15 communities to assess the socio-economic and environmental impacts of Artisanal and Small-Scale Gold Mining (ASGM).**

quantified and analyzed to identify trends and patterns.

**Interviews:** In-depth interviews were conducted with key stakeholders, including small-scale miners, community leaders, and trained laborers in the field. These interviews provided qualitative insights into the experiences, challenges, and perspectives of individuals directly involved in or affected by ASGM.

**On-Site Observations:** Researchers conducted on-site visits to gain firsthand knowledge of the mining operations and their impact on the environment. This method allowed for a direct assessment of environmental degradation and the consequences of ASGM.

### **5.3 Sample Characteristics**

The survey engaged a total of 632 respondents across the 15 communities in the Eastern Region. The sample was diverse in terms of demographics, including age, gender, and indigenous status. Of the respondents, 91% were male, and 9% were female. This gender disparity is notable and requires further exploration to understand its implications for mining communities.

The age distribution of respondents revealed that the majority were under 50 years of age, indicating a relatively young demographic involved in ASGM activities. Moreover, 67% of respondents identified themselves as indigenes of the surveyed communities, while 33% were non-indigenous, hailing from various regions in Ghana. The diversity of respondents allowed for a more comprehensive understanding of the socio-economic and environmental dynamics at play.

**This survey's findings indicate a notable gender disparity, with 91% of respondents being male, necessitating further exploration to understand its implications for mining communities in the Eastern Region of Ghana.**

## 5.4 Data Analysis

The data collected from the survey was analyzed rigorously to derive meaningful insights. Quantitative data, including the percentages of respondents identifying environmental issues, such as land degradation, deforestation, and water pollution, were scrutinized to assess the extent of these problems within the communities. The qualitative data obtained from interviews and on-site observations enriched the analysis by providing context and narratives that illuminated the lived experiences of those involved in or affected by ASGM. The analysis highlighted that a significant portion of respondents perceived environmental challenges, with land degradation, deforestation, and water pollution being major concerns. These findings underscore the far-reaching effects of ASGM on the environment. Moreover, the presence of soil infertility and the loss of biodiversity indicated that local ecosystems were also impacted by mining operations.

- Regarding indigene status, 67% (426 respondents) identified themselves as indigenes of the communities, while the remaining 33% (206 respondents) were non-indigenes. Among non-indigenes, the Eastern Region had the highest number of respondents (94), followed by the Upper East Region (29) and Ashanti Region (23).
- The educational background of the respondents varied, with 36% (225 respondents) having basic education, while 6% (35 respondents) reported having no formal education. A significant proportion of respondents demonstrated proficiency in reading and writing English (44% or 281 respondents).
- Occupationally, mining was the most common occupation, with 74% (403 respondents) identifying as miners. The majority of respondents earned between 501 to 3,000 Ghana Cedis (40% or 251 respondents), while 33% (206 respondents) earned less than 500 Ghana Cedis.
- Expenditure patterns indicated that groceries (95% or 601 respondents) and clothing (89% or 563 respondents) were the primary areas of spending. In terms of savings, a majority of respondents saved their income at home (69% or 435 respondents), while 63% (395 respondents) used mobile money services.

**This survey provides key insights for policymakers to address the socio-economic impacts of Artisanal and Small-Scale Gold Mining (ASGM) and promote sustainable development and community welfare.**



## 5.5 Summary

In summary, the survey design, data collection methods, sample characteristics, and data analysis were systematically executed to explore the socio-economic impacts of ASGM in the Eastern Region of Ghana. This survey findings provide valuable insights for policymakers, community representatives, and international development agencies to formulate targeted interventions and policies that mitigate the adverse impacts of illegal mining and promote sustainable development and community welfare.

**This survey provides key insights for policymakers to address the socio-economic impacts of Artisanal and Small-Scale Gold Mining (ASGM) and promote sustainable development and community welfare.**



# Economic Impact of Small-Scale Mining

- Income and Employment Generation
- Contribution to Local Economy
- Livelihoods of Small-Scale Miners
- Summary

## 6 ECONOMIC IMPACT OF SMALL-SCALE MINING

### 6.1 Income and Employment Generation

Small-scale mining in the Eastern Region plays a pivotal role in generating income and providing employment opportunities to the local population. The diverse occupational landscape reflects the economic significance of this sector.

**Occupational Diversity:** It is worth noting that most of the survey respondents, specifically 64%, described themselves as miners, which highlights the significant presence of small-scale mining in the area. These miners engage in various activities, from the extraction of ore to its processing. This diversity within the mining sector itself provides employment opportunities at different stages of the mining process.

**Multifaceted Occupations:** An interesting aspect is that 12% of respondents identified as both Farmers and Miners, indicating that many individuals engage in multiple income-generating activities. This diversification is a risk-mitigation strategy, allowing households to secure income from agriculture while participating in mining. This multipronged approach to income generation strengthens the resilience of local communities.

**Entrepreneurial Ventures:** 10% of respondents who were Miners involved in Business activities exemplify the entrepreneurial nature of some miners. They not only engage in mining operations but also venture into businesses related to the mining sector. These businesses may include buying and selling mining equipment, providing services to miners, or even establishing small-scale ore processing units. Such entrepreneurial initiatives contribute to the growth of the local economy.

**Diverse Occupations:** Beyond mining and its associated activities, the survey revealed a wide spectrum of occupations, including farming, business ownership, artisanal work, and public service roles. This diverse workforce not only showcases the multifaceted nature of economic activities in the region but also highlights the interconnectedness of various sectors, each supporting the other.

### 6.2 Contribution to the Local Economy

Small-scale mining significantly influences the local economy by directing income towards essential expenses and community development.

**Essential Expenditure:** The fact that 95% of respondents allocate a portion of their income to groceries underscores the role of mining income in supporting local markets and businesses. This expenditure contributes to the livelihoods of traders and food producers in the region.

**Healthcare and Education:** The substantial allocation of income to healthcare (69%) and education (63%) indicates a commitment to personal well-being and human capital development. This has a direct

impact on the local economy by supporting healthcare facilities, pharmacies, and educational institutions. It also reflects a long-term vision of investing in human resources for community development.

**Household Maintenance:** The allocation of funds for transportation, domestic bills, and household items by 71% and 72% of respondents respectively reinforces the local transportation sector and bolsters utility services. These expenses sustain local businesses while ensuring the comfort and well-being of households.

**Philanthropy and Community Support:** The culture of giving, with 54% of respondents engaging in philanthropic activities, extends a helping hand to local charities and community initiatives. This not only supports the less privileged but also strengthens social cohesion and community development efforts.

### **6.3 Livelihoods of Small-Scale Miners**

The economic well-being of small-scale miners is closely tied to the industry's activities, and this connection is vital to understanding the economic landscape of the Eastern Region.

**Income Sources:** Small-scale miners primarily rely on mining-related income. Their financial stability depends on the yields from their mining activities. This income supports various aspects of their lives, including their families, education, and healthcare. It can also influence their ability to invest in other economic ventures and community development.

**Economic Challenges:** The study emphasizes the need for tailored interventions to address the unique challenges faced by different segments of the population. For example, women involved in mining activities may require specific support and opportunities to overcome gender-related economic disparities. These interventions could include training, access to credit, and initiatives to promote gender equity within the sector.

**Sustainability and Development:** While small-scale mining contributes significantly to the local economy, it must be balanced with environmental and long-term development considerations. Ensuring the sustainability of this economic activity while addressing its environmental impacts is crucial to safeguarding the livelihoods of miners and the well-being of the local communities.

### **6.4 Summary**

In essence, small-scale mining in the Eastern Region represents a multifaceted economic pillar. It provides income and employment opportunities, supports local businesses and markets, and influences the livelihoods of miners and their communities. A holistic understanding of these economic dimensions is instrumental in shaping policies and strategies that promote sustainable economic development while preserving the local environment and quality of life.



# Social Impact of Small-Scale Mining

- Community Dynamics
- Health and Safety Issues
- Education and Skills Development
- Summary

## 7 SOCIAL IMPACT OF SMALL-SCALE MINING

### 7.1 Community Dynamics

Small-scale mining has profound effects on the dynamics of the communities surveyed in the Eastern Region of Ghana, specifically communities such as Bomaa, Banso, Apampatia, Awenare, Pameng, Gyedam (Ankaase), Osino, Nsuapemso, Akyem Mampong, Nsutem, Dwenase, Abompe, Muoso, Akrofofo, and Anyinam

#### Community Cohesion and Disruption

In communities like Bomaa, where mining is a prevalent source of income, the presence of small-scale mining activities has led to both cohesion and disruption within the community. On one hand, mining often serves as a source of livelihood for a significant portion of the population, with 68% of respondents involved in mining activities. This promotes a sense of economic solidarity among miners and their families. However, the influx of miners from various backgrounds and regions can also disrupt the existing social structures. Tensions arise due to competition for resources, including land, water, and economic opportunities, which is observable in communities like Banso.

#### Cultural Changes

In communities like Apampatia, the mining culture itself, with its own rituals, customs, and norms, may sometimes conflict with the existing cultural practices of the region. Additionally, as miners from diverse backgrounds converge in communities like Awenare, the exchange of cultural practices can either enrich or dilute the local culture, depending on the dynamics of interaction.

#### Migration and Population Dynamics

In communities like Bomaa, the mobility of miners seeking economic opportunities can lead to fluctuations in local demographics. This transient population can result in a gender imbalance within these communities, with a higher male-to-female ratio, affecting social dynamics, family structures, and access to services such as education and healthcare.

#### Occupational Health Risks

In communities like Akyem Mampong, Pameng and Gyedam (Ankaase), 72% of respondents were involved in mining activities, which are physically demanding and often hazardous. Miners face risks associated with accidents, exposure to harmful chemicals, and ergonomic strain. A lack of proper safety equipment and training compounds these risks, leading to potential health issues. Notably, 35% of miners in communities like Osino reported health problems, and 18% suffered from silicosis and respiratory issues.

### 7.2 Health and Safety Issues

Access to healthcare services is a critical concern in communities like Nsuapemso. While 77.2% of respondents reported accessing healthcare services in the last year, only 17.2% accessed primary healthcare services in communities like Akyem Mampong. Informal healthcare providers, known as tabletop healthcare services, played a significant role in providing healthcare access to 9.9% of

respondents in communities like Nsutem. However, concerns regarding the quality and safety of such services persist in communities like Dwenase.

### **Safety Regulations**

The enforcement of safety regulations in small-scale mining is often inadequate in all the surveyed communities. The lack of stringent safety measures and oversight increases the vulnerability of miners to occupational hazards. Additionally, the absence of health insurance and social security schemes further exacerbates the health and safety challenges faced by these communities.

## **7.3 Education and Skills Development**

The education landscape among the respondents in communities like Anyinam is diverse. Approximately 36% have completed basic education, while 22% have completed secondary education. However, 6% reported having no formal education in communities like Nsuapemso, emphasizing the existence of educational disparities. This indicates the need for inclusive educational interventions in communities like Akyem Mampong.

### **Literacy Rates**

The literacy rates among the respondents vary with their education levels in all the communities. Higher proficiency in reading and writing English was surveyed to be very low. Overall, literacy rates remained lower than desired, with 29% having a secondary level proficiency, underscoring the importance of tailored literacy programs across all education levels to support socio-economic development.

### **Skills Development**

The acquisition of skills is crucial for economic diversification. Small-scale mining often limits opportunities for skills development beyond mining-related activities in the communities. Out of this survey, 62% of Artisans and 50% of Businesspersons earn within the GHS 501-3,000 income bracket, highlighting the need for programs that enable community members to acquire diverse skills and explore alternative livelihoods.

## **7.4 Summary**

In conclusion, small-scale mining in communities such as Bomaa, Bansa, Apamptia, and many others in the Eastern Region of Ghana has far-reaching socio-economic impacts on the communities surveyed. It influences community dynamics, health, and safety, as well as education and skills development. Recognizing the multifaceted nature of these impacts is essential for the development of targeted interventions and policies that promote the well-being and sustainable development of these communities. A notable concern is the relatively low literacy rates, which necessitate urgent attention to uplift the educational standards in these communities.



# Environmental Impact and Sustainability

- Environmental Practices in Small-Scale Mining
- Land Reclamation and Rehabilitation
- Sustainable Practices



## **8 ENVIRONMENTAL IMPACT AND SUSTAINABILITY**

### **8.1 Environmental Practices in Small-Scale Mining**

Small-scale mining activities in the Eastern Region of Ghana have raised concerns about their environmental practices. This section of the report delves into the environmental practices adopted by small-scale miners.

#### **Mining Methods and Environmental Impact**

Small-scale mining in these regions predominantly employs the use of rudimentary tools and methods. Such practices, while cost-effective, have significant adverse environmental consequences. The manual excavation and crushing of ore degrade the landscape and release harmful dust particles, contributing to air pollution. Moreover, the use of mercury in the gold extraction process poses a severe risk to the environment and public health.

#### **Mining Sites and Vegetation Destruction**

Mining activities often entail deforestation, as miners' clear large areas for excavation. The extent of vegetation destruction is substantial, negatively impacting local ecosystems, including the flora and fauna of these areas. Furthermore, the clearing of forests has consequences for climate change, affecting the microclimate and water retention capacity in these regions.

#### **Water Pollution and Quality Concerns**

Mining requires substantial water for washing purposes, and this act, often referred to as "washing" significantly contributes to water pollution. The extensive use of water resources leads to a depletion of water quality in rivers and streams. Mercury and other chemicals used in the extraction process find their way into water bodies, endangering aquatic life and public health.

### **8.2 Land Reclamation and Rehabilitation**

#### **Challenges in Land Reclamation**

The challenges in land reclamation and rehabilitation following small-scale mining operations are critical issues that affect the environmental sustainability of the affected regions. After the cessation of mining activities, many mining sites in the Eastern Region of Ghana are left in an abandoned and unrehabilitated state. This lack of reclamation efforts has profound consequences for the local environment, including land degradation, soil infertility, and a loss of biodiversity. Abandoned mining sites typically bear scars of land degradation, with deep pits, excavated mounds, and barren areas that result in a landscape marred by a lack of topsoil and erosion-prone surfaces. Soil infertility is a common issue, with contamination from mining activities, such as the use of heavy machinery and chemicals like mercury, making it difficult for vegetation to naturally regenerate. The presence of harmful chemicals can also inhibit the growth of crops and other plant life. Furthermore, mining operations disrupt local ecosystems, leading to a loss of biodiversity as they encroach on natural habitats, clear forests, disturb aquatic ecosystems due to water pollution, and directly destroy habitats. These challenges underscore the need for robust land reclamation

and rehabilitation practices to mitigate the long-term environmental impacts of small-scale mining in the region.

### **8.3 Sustainable Mining Practices**

The promotion of sustainable mining practices is critical to mitigate the environmental impact of small-scale mining. Some miners have adopted more responsible methods, such as using gravimetric methods instead of mercury for gold extraction. These sustainable practices, while less common, have been observed.

#### **Legal and Regulatory Framework**

The legal and regulatory framework governing small-scale mining in Ghana, as detailed in the Small-Scale Gold Mining Law (PNDCL 218), seeks to promote environmentally responsible mining practices. However, the enforcement of these regulations remains a challenge. Despite the existence of these laws, illegal mining, known as "galamsey," continues to contribute significantly to environmental degradation.

#### **Community Initiatives and Education**

Community-based initiatives have been undertaken to promote sustainable mining practices and environmental conservation. Local organizations and NGOs have collaborated with miners to raise awareness and provide training on responsible mining practices.

#### **Environmental Impacts**

In this section of the report, we will further explore the environmental consequences of small-scale mining, considering the insights provided by the surveyed communities.

#### **Environmental Perceptions of Communities**

The communities surveyed expressed significant concerns about environmental degradation resulting from small-scale mining. Of the respondents, 92% (577 individuals) emphasized land degradation as a significant issue in their communities. This highlights the potential long-term consequences mining could have on the natural landscape. Moreover, deforestation was a major concern for 72% (452 respondents), while water pollution worried 75% (470 respondents). These figures underscore the far-reaching effects of mining on environmental health. Furthermore, 31% (194 respondents) noted soil infertility because of mining, and 28% (172 respondents) observed a loss of biodiversity, indicating that local ecosystems and wildlife are being adversely affected. Only a small fraction of respondents, 4% (21 individuals), perceived no significant environmental impact from small-scale mining.

Small-scale mining in the Eastern Region continues to have severe environmental impacts, causing concerns about land degradation, deforestation, water pollution, soil infertility, and loss of biodiversity. "Lack of information also contributes to illegal mining and the destruction of the natural environment. Miners and operators in the informal sector lack knowledge of the institutions and legal requirements governing the subsector. They also lack the basic technical skills and capacity needed for practicing sustainable mining. There is generally low environmental awareness within the sector. The study found

that, even though some mining companies had licenses and permits, their operations were illegal" (Hausermann & Ferring, 2018, p. 1010). While some efforts towards sustainable mining practices and legal frameworks exist, effective implementation remains a challenge. Community-based initiatives and education are essential to raising awareness and fostering environmentally responsible mining practices for a sustainable future in these regions.



# Discussion on Key Findings

## 9 DISCUSSIONS ON KEY FINDINGS

- Agricultural production, especially in cocoa farming, is adversely impacted by small-scale mining activities. Local farmers encounter difficulties as mining operatives acquire land surrounding their farms, introducing risks from mining pits and mud, impeding farm access and cultivation. This poses a substantial threat to cocoa farming, a vital element of rural livelihoods and Ghana's major agricultural export. Faced with the hazards of small-scale mining, farmers are compelled to surrender their lands to mining operators. Furthermore, the encroachment of mining in agricultural areas leads to the displacement of entire rural communities.
- Communities across the eastern region, as revealed in this survey, face heightened risks of water and airborne diseases resulting from ASM activities. Small-scale mining, particularly the practice of leaving pits unfilled after operations, fosters conditions conducive to malaria proliferation. The abandoned pits serve as breeding grounds for mosquitoes, significantly contributing to the prevalence of malaria in the region.
- Unemployment, especially among the youth, serves as a major drive for engaging in galamsey. Individuals resort to illegal mining as an alternative means of livelihood due to limited job opportunities and job insecurity.
- Galamsey has emerged as a significant economic venture, drawing participation from both local and foreign workers, and resulting in socio-economic disparities. Men, women, and children are actively involved in small-scale mining daily to meet their basic needs. The compensation for their efforts is determined by local gold buyers using scales calibrated to measure the weight or ounce of the extracted gold.
- Poor infrastructure and limited access to basic amenities contribute to the economic disadvantage of settlements in mining areas, as these conditions hinder overall development and well-being. Furthermore, for all 15 surveyed communities, there were no existing factories that employ people from the communities.
- There is disinterest in formal education opportunities among galamsey communities. Educational disparities are prevalent as more and more children drop out of school in search of "quick money," contributing to perpetuating socio-economic challenges and hindering the development of affected communities.
- Ambiguities in land tenure administration contribute to challenges in combating illegal mining. Inadequate land tenure regulations create a conducive environment for illicit mining activities. Political leniency and corruption within law enforcement hinder effective small-scale mining

regulation and enforcement. Inconsistent enforcement allows illegal mining activities to persist, exacerbating environmental degradation.

- Galamsey operations contribute to land degradation, deforestation, and water pollution. Severe environmental damage, including depleted forest cover, poses risks to ecosystems, water sources, and overall environmental sustainability.
- In our survey, it became apparent that some individuals involved in small-scale mining resorted to drug use and abuse as a means of coping with the demanding physical nature of their work. The strenuous conditions and long hours involved in mining activities were cited as reasons for turning to substances to sustain energy and endure the challenges they face.
- Our findings highlighted social implications within the surveyed communities. The nature of small-scale mining appeared to contribute to social issues such as an increase in prostitution, teenage pregnancy, and early wedlock. The transient and often informal nature of the work may lead to unstable living conditions, impacting family structures and social dynamics.
- Our survey revealed instances where local chiefs were implicated in illegal mining activities. This suggests a complex interplay of power dynamics within these communities, with influential figures engaging in practices that are not only detrimental to the environment but also undermine the legal framework governing mining operations.
- Another significant observation was the evident gender disparity in the mining sector. The survey revealed a strikingly low representation of women actively involved in mining activities across most communities. This gender gap raises concerns about equal opportunities and the need for initiatives to promote the inclusion of women in the sector.
- A unique and notable finding was the prevailing belief in blood sacrifices among local communities as a compensation to the gods to increase gold in the land. This cultural and spiritual dimension to mining practices sheds light on the deeply ingrained beliefs that influence the behavior and decisions of individuals engaged in small-scale mining.



# ACKNOWLEDGEMENTS

## 10 ACKNOWLEDGEMENT

We extend our deepest gratitude to the following individuals and organizations whose invaluable support and contributions made this survey report on small-scale mining in the Eastern Region of Ghana, particularly Atiwa East, Atiwa West and Fanteakwa South possible. Their dedication and expertise were instrumental in the successful completion of this project.

### A Rocha Ghana

We would like to express our sincere appreciation to A Rocha Ghana for their unwavering commitment to environmental conservation and their partnership in this endeavor. Their extensive knowledge of environmental stewardship and their guidance were pivotal in helping us to complete this survey.

### Local Communities and Respondents

We extend our appreciation to the local communities in the Atiwa East, Atiwa West and Fanteakwa South districts and the respondents who generously shared their time, knowledge, and experiences with us. Their cooperation and openness provided essential data and perspectives that shaped this report.

### Traditional Authorities and Leaders

We acknowledge the traditional authorities and leaders in the surveyed communities for their cooperation and willingness to engage in constructive dialogue. Their openness in providing insights into the historical and current state of mining in the region enriched our understanding of the complex dynamics at play.

### Project Team

Our heartfelt thanks go to the dedicated project team members at the Centre for Remote Sensing and Geographic Information Services (CERSGIS). Who worked tirelessly to collect, analyze, and compile the data. Their expertise in data collection, remote sensing technology, and geographical information systems (GIS) greatly enhanced the quality and accuracy of this research. We are grateful for their technical support and valuable insights throughout the project.

This report would not have been possible without the collaborative efforts of all those mentioned above. We are grateful for your support and look forward to continued cooperation in addressing the complex challenges associated with small-scale mining in Ghana.



## 11 **RECOMMENDATIONS.**

### **Environmental Stewardship**

Prioritize stringent environmental protection measures to mitigate the adverse impact of small-scale mining. This involves stringent regulations, regular monitoring, and robust enforcement of reclamation efforts.

### **Strengthen Legal Oversight**

Improve compliance with existing small-scale mining regulations. This can be achieved by enforcing registration requirements and imposing penalties for illegal mining activities.

### **Community Engagement**

Foster collaboration between traditional authorities, municipal assemblies, and community members to ensure responsible and sustainable mining practices. This includes facilitating dialogue and dispute resolution mechanisms.

### **Alternative Livelihoods**

Encourage economic diversification by promoting alternative livelihoods for community members. This can mitigate the overreliance on mining and reduce the vulnerability of the local population.

### **Public Awareness**

Raise awareness among community members about the environmental consequences of small-scale mining and the importance of compliance with regulations. This can be achieved through educational campaigns and workshops.

### **Chinese Involvement**

Engage in constructive dialogue with Chinese citizens involved in small-scale mining to promote environmentally responsible practices and ensure they adhere to Ghanaian laws and regulations.

### **Economic Equity**

Explore opportunities for equitable economic participation in small-scale mining. This may involve supporting women, youth, and marginalized community members to engage meaningfully in the sector.

### **Research and Data Collection**

Invest in further research to comprehensively understand the social and economic dynamics of small-scale mining in the Eastern Region. This data will inform more effective policies and interventions.

By implementing these recommendations, the Eastern Region of Ghana can work toward a more sustainable and equitable small-scale mining sector that respects the environment and supports the livelihoods of local communities. These steps can also help address the complex challenges associated with the industry, from compliance with regulations to economic diversification.

## 12 APPENDICES

### 12.1 Survey Questionnaire

Link to survey questionnaire.

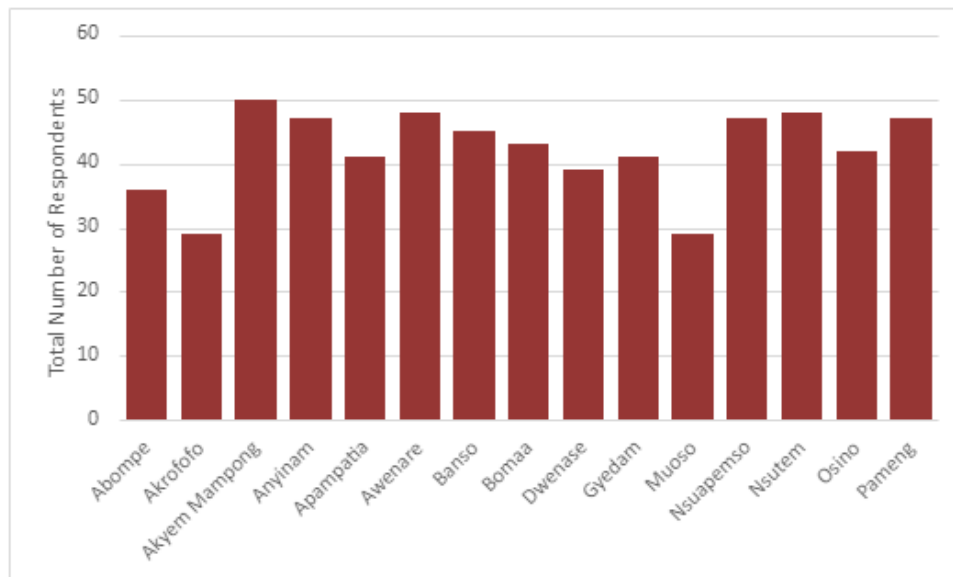
<https://drive.google.com/file/d/1BttZlt-Lk1NCDDYeappltl3SKvsuQFi7/view?usp=sharing>

### 12.2 Data Tables and Graphs (Statistical Report)

This section of the report will present the findings derived from our extensive socio-economic baseline survey conducted across 15 communities in 3 districts of the Eastern Region of Ghana. The survey was meticulously designed to understand the diverse effects of illegal mining, colloquially referred to as "Galamsey," on the communities. The survey delves into various facets of illegal mining including demographics, education and literacy rates, gender perspectives, female participation in Artisanal and Small-scale Gold Mining (ASGM), awareness of climate change implications, socio-economic livelihoods, as well as the perceptions and experiences of miners engaged in ASGM, focusing on their specific challenges, needs, and motivations. A particular area of concern was the involvement of minors in Galamsey activities, the environmental ramifications of such mining practices, and the subsequent impact on the health and well-being of both the miners and the community at large. Through the collection and rigorous analysis of data on these themes, this report endeavours to furnish a holistic understanding of the socio-economic dynamics of illegal mining within the region. The insights garnered from this report are integral to the overarching project report and are intended to serve as a valuable resource for an array of stakeholders, including policymakers, community representatives, and international development agencies. The goal is to leverage these findings to inform and guide the formulation of policies and initiatives that aim to mitigate the adverse impacts of illegal mining in Ghana, paving the way for sustainable development and improved community welfare.

The distribution of respondents across the 15 communities in the Eastern Region of Ghana was integral for achieving a representative and comprehensive understanding of the socio-economic impact of illegal mining. A total of 632 respondents were engaged in the survey, providing valuable insights into the demographics and characteristics of the population in these communities.

The distribution of respondents across the communities is depicted in the chart below as follows:



*Figure 1: Respondents distribution across 15 surveyed communities.*

The chart above illustrates the distribution of respondents across the 15 communities, highlighting that Akyem Mampong, Awenare, Nsutem, and Pameng had the highest number of respondents with 50, 48, 47, and 47 respondents, respectively. On the other hand, Akrofofo and Muoso had the lowest number of respondents with 29 each. This diversified approach to respondent selection not only strengthened the robustness of the survey findings but also enabled the identification of community-specific insights, which are crucial for the formulation of targeted interventions and policies.

### **12.2.1 Gender Distribution**

An analysis of the gender distribution of the respondents revealed a pronounced disparity. Of the total 632 respondents, 575 (91%) were male, while 57 (9%) were female. This significant difference highlights the male predominance in survey participation and necessitates a deeper exploration of the factors contributing to this gender imbalance and its implications on the socio-economic dynamics of illegal mining in the region.

### **12.2.2 Age Distribution**

The age distribution of the respondents was as follows: 50% were in the 18-30 years age group, 36% were in the 31-49 years age group, and 7% each were in the  $\geq 60$  years and 50-59 years age group. This suggests that most of the respondents were under 50 years of age, pointing to a younger demographic.

A comparative analysis of the age distribution of males and females disclosed distinct patterns. The data indicates that males dominate each age category, with a significantly higher number of male respondents than female respondents.

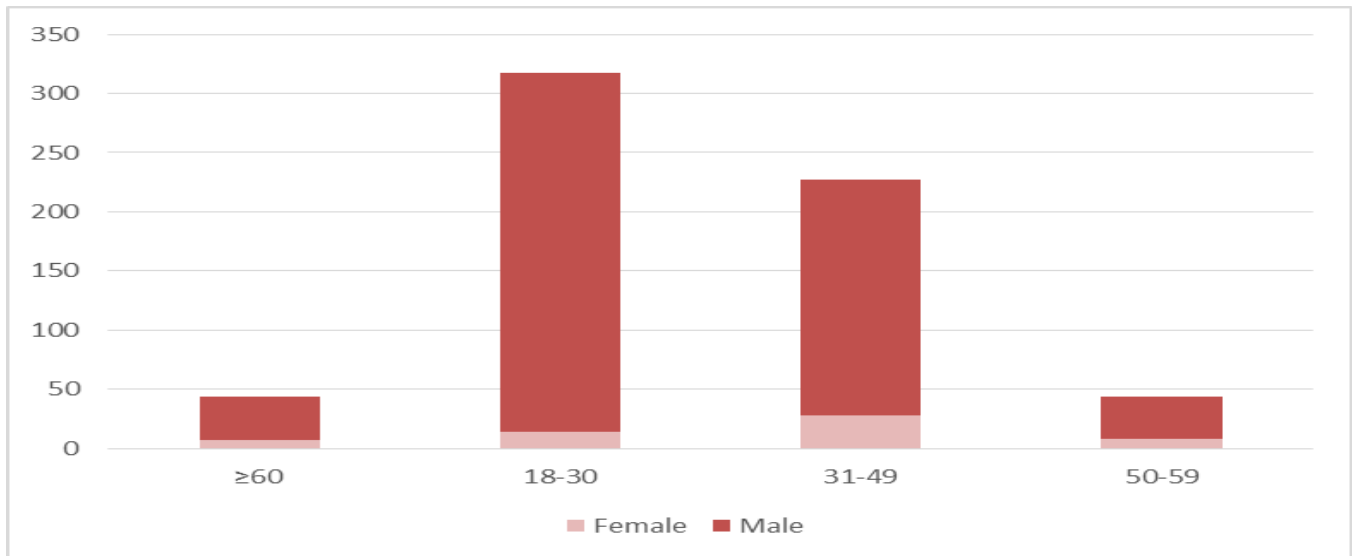
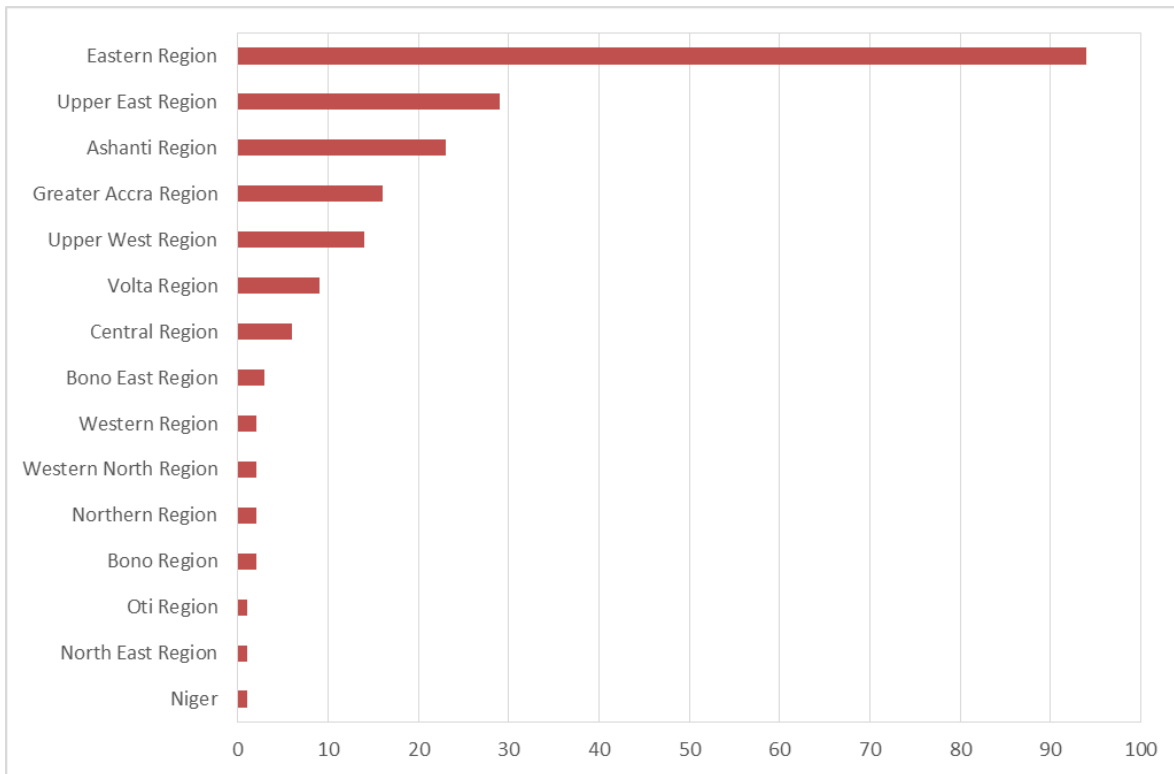


Figure 2: Age distribution, showing a younger demographic, with distinct patterns of male dominance across age categories.

The 18-30 years age group has the highest number of male respondents (303), while the 31-49 years age group has the highest number of female respondents (28).

An inquiry into the indigene status of the respondents revealed insightful information about the composition of the communities surveyed. Of the 632 respondents, 426 individuals (67%) identified themselves as indigenes of the communities, while 206 individuals (33%) indicated that they were non-indigenes.

Further analysis of the non-indigenous respondents revealed their regional origin within Ghana. From the Eastern Region, which had 94 respondents, the majority hailed from Akwatia (10 respondents) and Kwabeng (6 respondents). In the Upper East Region, with 29 respondents, the majority were from Bolgatanga (20 respondents). The Upper West Region, with 13 respondents, had a notable concentration in Wa (9 respondents), while the Greater Accra Region, with 16 respondents, was primarily represented by respondents from Accra (6 respondents). In the Ashanti Region, with 23 respondents, the majority were from Kumasi (11 respondents). Other regions represented included the Central Region (6 respondents), Bono East Region (3 respondents), Bono Region (2 respondents), Oti Region (1 respondent), North-East Region (1 respondent), Northern Region (2 respondents), Volta Region (9 respondents), Western North Region (2 respondents), and respondents from the country of Niger. The regional distribution of the non-indigenous respondents will be visually presented in the chart below.

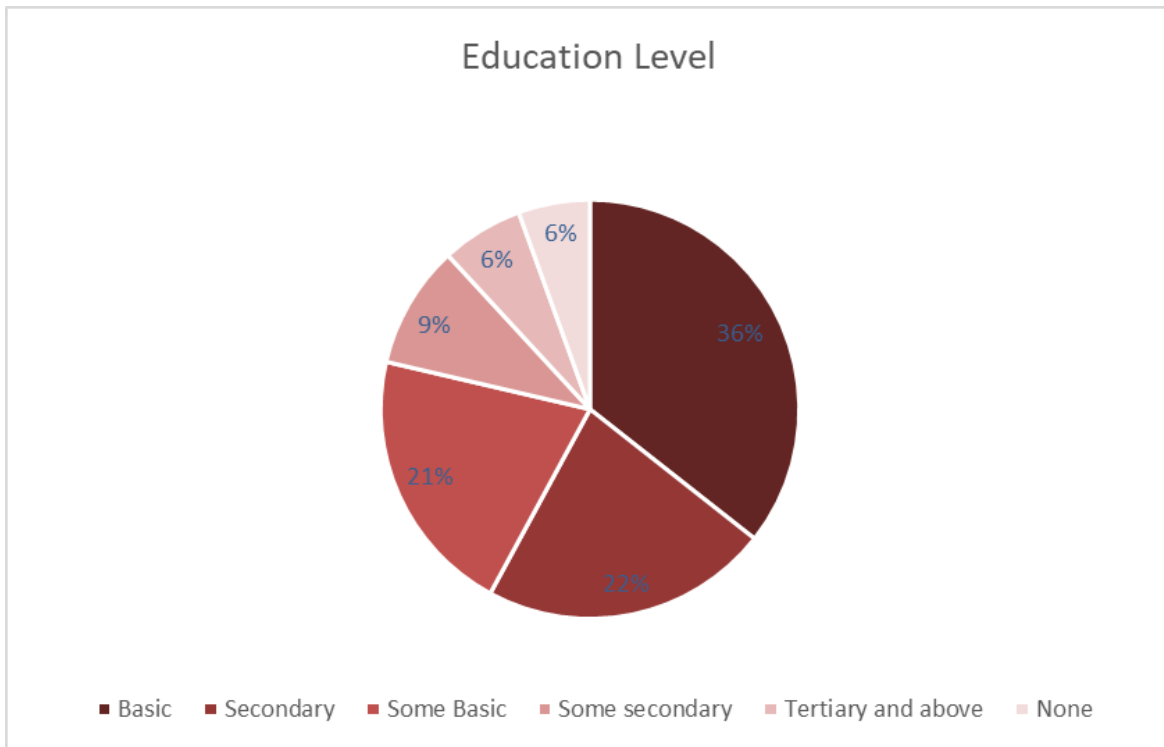


*Figure 3: Data of indigenous and non-indigenous presence, indicating the importance of considering both perspectives and regional factors in survey analysis.*

The data highlights a substantial presence of indigenous respondents, underlining the potential for a deeper understanding of the traditional and cultural nuances associated with the socio-economic dynamics of illegal mining. The non-indigenous respondents, constituting a significant one-third of the total, suggest the existence of external factors or migration patterns that may also influence the communities' perspectives and experiences. This underscores the need to consider both indigenous and non-indigenous viewpoints, as well as regional factors, in the analysis and interpretation of the survey findings.

### 12.2.3 Education and Literacy

The survey delved into the education and literacy levels of the respondents, providing valuable insights into the educational background of the communities involved in illegal mining. The chart of education levels among the 632 respondents is as follows:



*Figure 4: Education data showing varied literacy levels, highlighting the need for targeted interventions for community development.*

The data reveals that a significant portion of the respondents (36%) have completed basic education, while 22% have completed secondary education. Furthermore, 21% of the respondents have had some level of basic education, and 9% have had some secondary education. A smaller proportion of respondents (6%) reported having no formal education, while 6% have attained tertiary education or higher.

The survey also explored the literacy rates of the respondents based on their education levels, providing insights into the reading and writing abilities of the communities.

For respondents with Basic Education, 29% could read and write English, while 3% demonstrated high proficiency. In Secondary Education, 55% could read and write English, with 20% achieving high proficiency. For Some Basic Education, 13% could read and write English, and 35% of those with Some Secondary Education had this ability. Among those with Tertiary Education and above, 53% could read and write English, with 35% demonstrating high or very high proficiency.

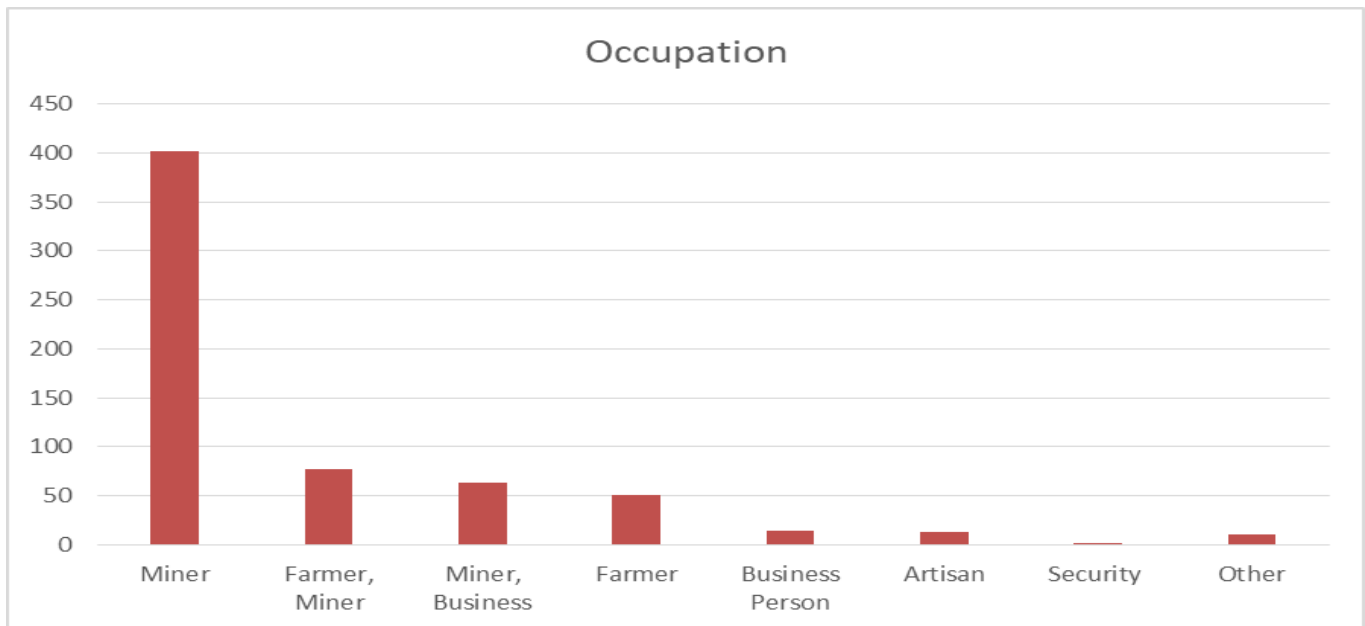
The data indicates variations in proficiency levels, with higher proficiency observed in more advanced education levels. It underscores the need for targeted literacy interventions across all education levels to support the socio-economic development of communities involved in illegal mining.

## 12.2.4 Livelihood and Economic Situation

To understand the livelihood and economic situation of the respondents, we explored various aspects of their lives, including their occupations, income levels, and expenditure patterns. This comprehensive approach allowed us to gain insights into the various factors that contribute to their economic well-being. The information gathered through this survey paints a picture of a diverse range of occupations, income brackets, and spending habits. It also highlights the need for targeted interventions and support to address the unique challenges faced by different segments of the population, particularly women and those involved in mining activities.

When analyzing the occupational distribution of the respondents, we observe a diverse range of roles. Most respondents were engaged in mining activities, with Miners constituting 64% (402 respondents) of the total. Additionally, a substantial 12% (77 respondents) identified as both Farmers and Miners. Another notable group, Miners who also engage in Business, accounted for 10% (63 respondents). Businesspersons made up 2% (14 respondents), while Farmers represented 8% (51 respondents). Artisans were also present, comprising 2% (13 respondents).

Other occupations, including an Assemblyman, Cleaner, Driver, Engineer, Factory Worker, Police Commander, Security Personnel, Teacher, Tradesperson, and an Unemployed individual, were represented by a smaller number of respondents. Each of these roles had just one respondent, except for Security Personnel, which had two. This wide-ranging distribution highlights the diversity in the employment landscape of the communities surveyed.



*Figure 5: Data on occupations showing diverse employment opportunities.*

In our exploration of the income distribution across various occupations, we found that most Artisans, about 62%, reported earnings in the GHS 501-3,000 range. Interestingly, 23% of Artisans indicated earning less than GHS 500. Shifting our focus to Businesspersons, we observed a similar trend. About 50% of Businesspersons fall within the GHS 501-3,000 income bracket, while a significant 43% reported earnings below GHS 500.

For those identifying as Farmer, Miner, and Miner, Business, the income distribution showcased some nuances. In the Farmer and Miner category, 57% of respondents earned GHS 501-3,000, with a marginal 1% earning between GHS 3,001-6,000 and GHS 12,001-15,000. The Miner group displayed a broader income distribution, with 62% earning GHS 501-3,000, 18% earning GHS 3,001-6,000, and smaller fractions in the higher income brackets. The Miner Business category revealed that 63% earned between GHS 501-3,000, with a minor percentage surpassing GHS 30,001.

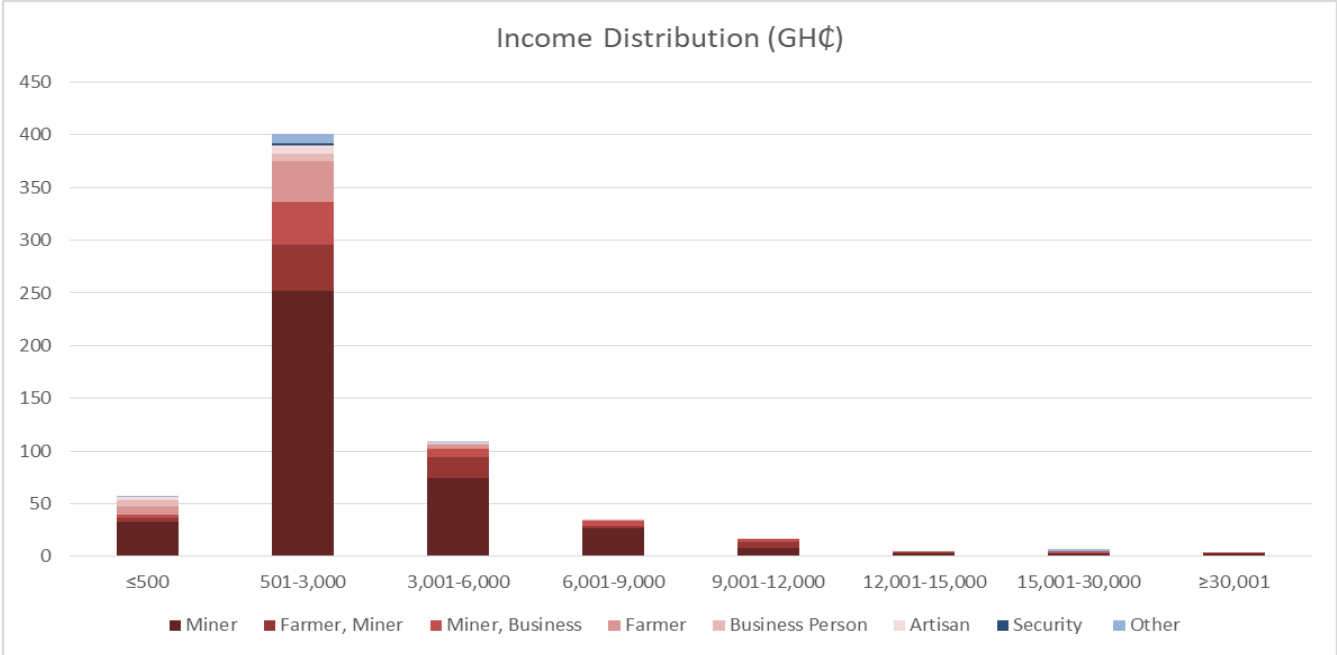


Figure 6: Income data showing varied roles, indicating a prevailing income disparity across occupations.

For other roles, including Assemblyman, Cleaner, Driver, Engineer, Factory worker, Police commander, Security, Teacher, Tradesperson, and Unemployed, the majority reported earnings within the GHS 501-3,000 range. However, the sample sizes for these roles were limited, making it difficult to draw extensive conclusions about their income distribution.

The data underscores a prevailing income disparity across different occupations, with a noticeable concentration of respondents, regardless of their job roles, earning between GHS 501-3,000.

### 12.2.5 Expenditure

The results of our study reveal a wide range of spending habits among the respondents, with essential items taking precedence. A significant 95% of respondents earmarked a portion of their income for groceries, highlighting the importance of daily sustenance. Additionally, clothing, a fundamental necessity, and healthcare services, including medicine and doctor consultations, emerged as major outlays for 89% and 69% of respondents, respectively.

Transportation expenses, a critical component of daily life, were incurred by 71% of respondents, underscoring the centrality of mobility. Moreover, 72% of respondents reported allocating funds for domestic bills such as electricity, rent, and water, indicating the inherent costs of household maintenance.

Education, a cornerstone of personal development, was prioritized by 63% of respondents, reflecting the community's commitment to learning. Other notable spending areas included bulk foods, secured by 53%,



and household items by 50% of respondents. Notably, 54% of respondents engaged in philanthropy, demonstrating a culture of giving.

Religious celebrations, alongside life events such as marriages, births, and burials, were observed by 41% and 33% of respondents, respectively. Meanwhile, 44% of respondents invested in home improvements, and 29% in business ventures, highlighting their aspirations for personal and economic growth. Land purchases and building construction were pursued by 24%.

Conversely, a smaller proportion of respondents, 13% and 21%, reported expenditure on animal feed and farm gadgets, respectively, suggesting a more limited involvement in agricultural activities.

### **12.2.6 ASGM and The Miners**

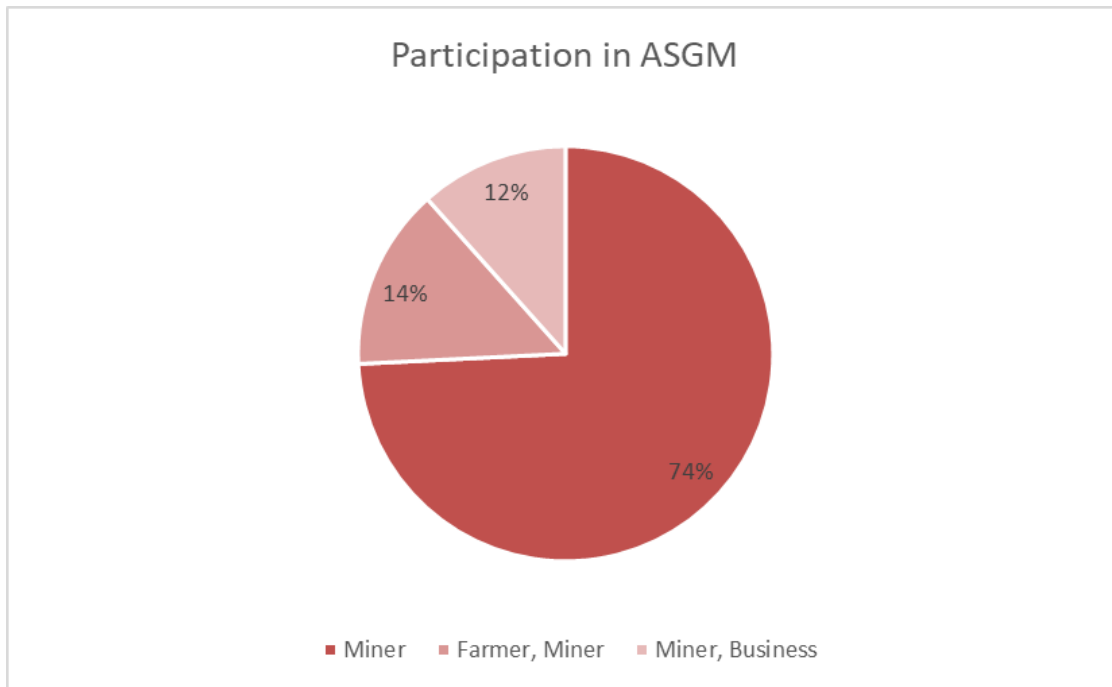
Among the 632 respondents surveyed, a substantial 543 individuals, representing 86% of the total respondents, indicated involvement in mining activities. These respondents were categorized into distinct groups based on their mining involvement:

**Miner:** The largest group, comprising 74% (403 respondents), identified solely as Miners. This indicates that mining is a primary occupation for a significant majority of the respondents involved in mining activities.

**Farmer, Miner:** Additionally, 14% (77 respondents) described themselves as both Farmers and Miners. This dual-role category suggests a combination of agricultural and mining activities, highlighting the diversification of income sources for these respondents.

**Miner, Business:** A smaller proportion, 12% (63 respondents), identified as both Miners and Business Owners. This group reflects a mix of mining and entrepreneurial ventures, underscoring the economic dynamism within the mining communities.

The pie chart below provides a visual representation of the distribution of respondents across these mining involvement categories.



*Figure 7: Mining roles among respondents.*

The data underscores the prominence of mining as a livelihood and economic activity within the surveyed communities. The diverse roles assumed by respondents, including mining, farming, and business ownership, highlight the multifaceted nature of their economic engagements.

### **12.2.7 Age Distribution of Miners**

The age distribution within the mining respondents leans heavily towards the younger generation, with a significant representation from individuals between the ages of 18 and 30, accounting for 51% of those engaged in mining activities. The middle-aged group, ranging from 31 to 49 years old, makes up 38% of the mining respondents. Older age groups, specifically those aged 50-59 and above 60, constitute smaller portions of the mining community, at 9% and 2% respectively. This suggests that mining activities are more prevalent among the younger and middle-aged populations in the surveyed communities.

### **12.2.8 Educational Level of Miners**

Diving into the educational levels of the respondents, we find a varied distribution. A considerable proportion of respondents engaged in mining have attained some levels of Basic education (32%), while others have completed Secondary education (30%). Additionally, there are smaller proportions of respondents with educational backgrounds spanning Some Basic (12%), Some Secondary (13%), and Tertiary and above (7%). This indicates a diversity in educational attainment among individuals involved in mining activities within the communities surveyed.

## 12.2.9 Gender and Pay Distribution of Miners

In terms of gender, the data reveals a stark gender disparity of ASGM participants, with a staggering 93% of the respondents engaged in mining activities being male, compared to a mere 7% who are female. This disparity is further entrenched in the income distribution among respondents engaged in mining. Within the 501 - 3,000 Ghana Cedis bracket, 89% of male respondents reported earnings, which heavily outweighed the 11% of female respondents. This trend of male dominance persists across all income categories. Notably, males exclusively occupy the highest income category, earning above 30,000 Ghana Cedis, comprising 100% of the respondents in this bracket. In the 3,001 - 6,000 Ghana Cedis bracket, 88% are male respondents compared to 12% female respondents. Similarly, in the 6,001 - 9,000 Ghana Cedis bracket, 87% are male and 13% are female. For the 9,001 - 12,000 Ghana Cedis bracket, males constitute 86% while females represent 14%. Finally, in the 12,001 - 15,000 Ghana Cedis bracket, 91% are male respondents and 9% are female respondents.

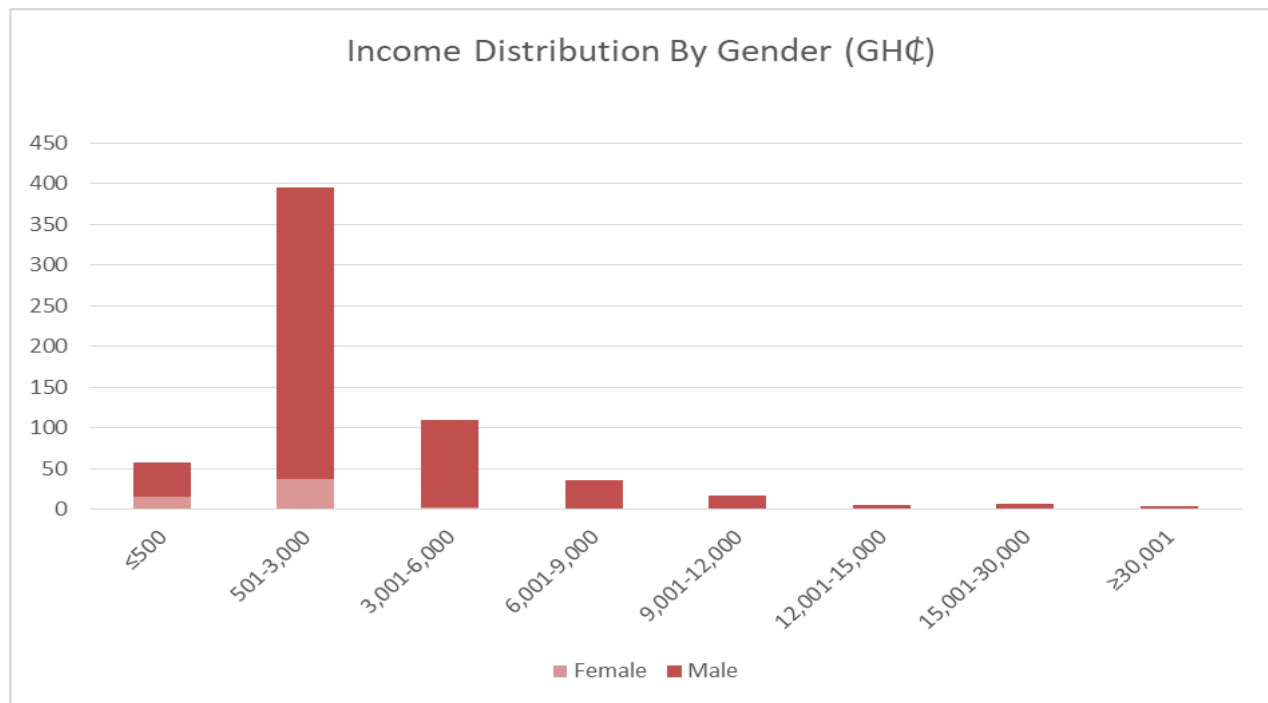


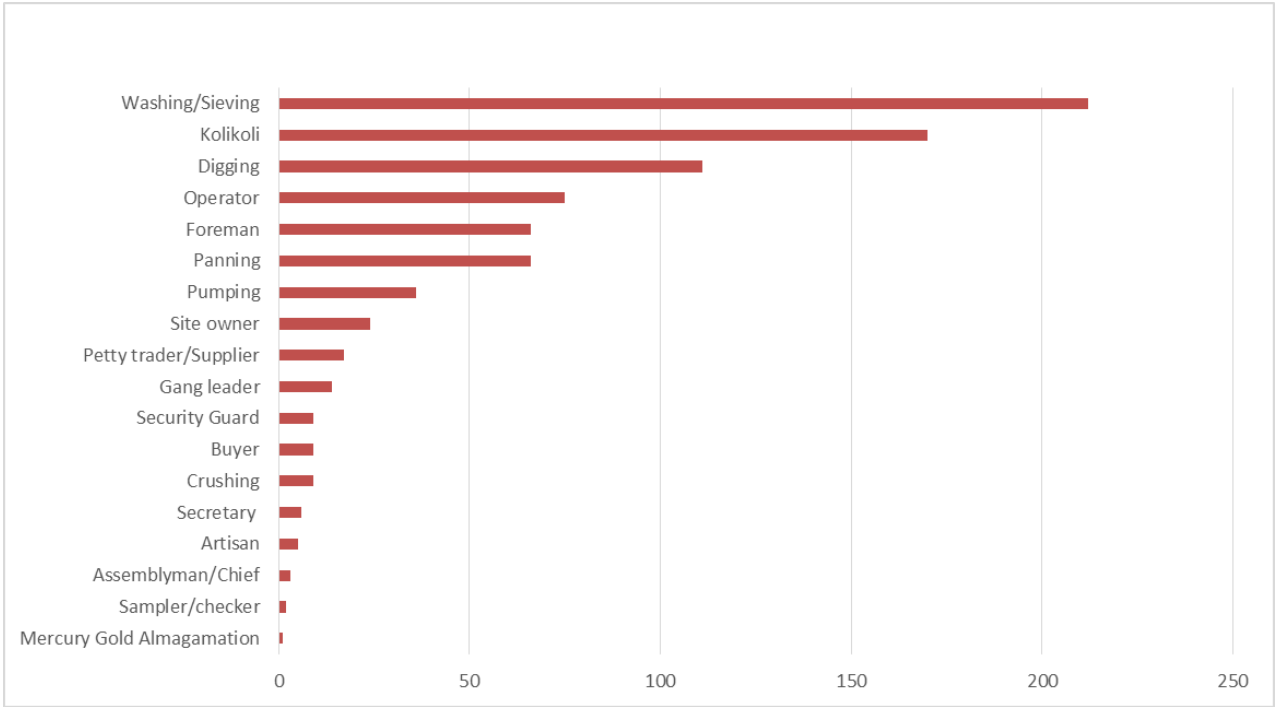
Figure 8: Gender gap in ASGM participation and income distribution.

Our survey sought to understand the variety of roles individuals assume in Artisanal and Small-Scale Gold Mining (ASGM) among the 543 respondents engaged in mining, revealing a diverse range of activities. **Washing/Sieving** was the most common role, reported by 39% of the respondents, indicating a significant portion of the mining workforce's involvement in the separation and cleaning of mined materials. **Kolikoli**, a low-level ASGM activity, was reported by 31% of the respondents. **Digging** was identified by 20% of the respondents, emphasizing the labor-intensive nature of mining activities. **Panning** and **Operator** roles were reported by 12% and 14% of the respondents, respectively, signifying their importance in the mining process. Foreman and Pumping roles were reported by 12% and 7% of the respondents, respectively, underlining their roles in coordination and operation. **Site Owner** and **Gang Leader** roles were reported by 4% and 3% of the respondents, respectively. **Artisan, Buyer, Security Guard, and Sampler/Checker** roles were reported by less than 2% of the respondents each, suggesting limited involvement in these specialized roles. **Mercury Gold Amalgamation**, a highly specialized role, was reported by only one

respondent. Additionally, three community leaders (**Assemblyman/Chief**) were interviewed, who provided insights into ASGM activities in their communities, despite not being directly involved in mining.

**12.2.10 Roles In ASGM**

The chart below provides a visual representation of the distribution of respondents across these roles in ASGM.



*Figure 9: Distribution of ASGM roles at mining sites*

It is important to note that respondents could select more than one role, and the sum of the percentages may exceed 100% due to the multi-choice nature of the question.

**12.2.11 Land Acquisition for ASGM**

In the exploration of how lands are typically acquired for Artisanal Small-Scale Gold Mining (ASGM) activities, a variety of sources were identified by the respondents. A considerable proportion of respondents, 443 (69%), indicated that they acquire land for mining from Farmers. This suggests that agricultural lands are a common source for mining activities. Mining Company was another notable source, accounting for 98 (15%) of the responses, indicating formal mining operations and collaborations. Acquiring land through the Chief was reported by 39 (6%), emphasizing the role of traditional authorities in land allocation. Personal ownership and acquisition from Family and Friends were also mentioned, albeit to a lesser extent.

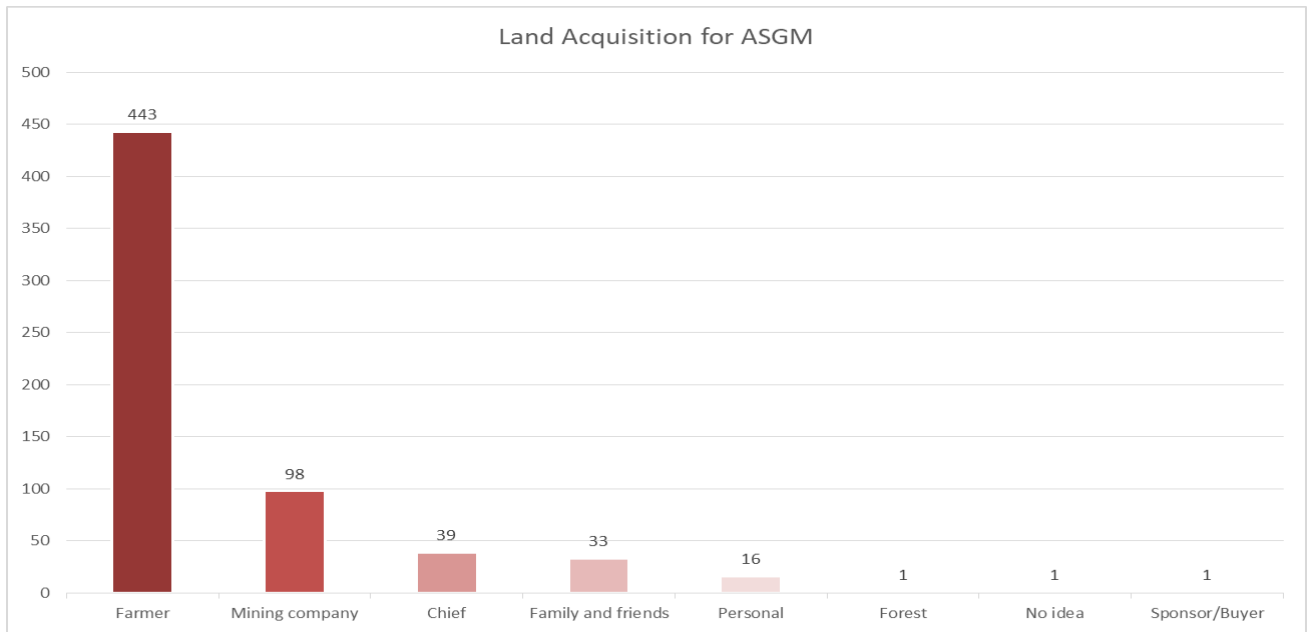


Figure 10: Sources of land acquisition for ASGM activities.

### 12.2.12 Land Use at Site Before ASGM Activities

Moreover, the survey revealed that before ASGM activities, the primary land use at the site was predominantly Cocoa Farming, cited by 74% (467 respondents). This highlights the significance of cocoa cultivation in the region. Agriculture was the next common land use, reported by 42% (266 respondents). Delving further into the types of crops grown, Tubers (Yam, Cassava, etc.) emerged as the most common crop, reported by 31% (199 respondents), followed by Oil palm at 10% (66 respondents), and Grains (Maize) at 10% (61 respondents). Fruits and Vegetables were less commonly grown, reported by 2% (11 respondents) and 2% (14 respondents) respectively.

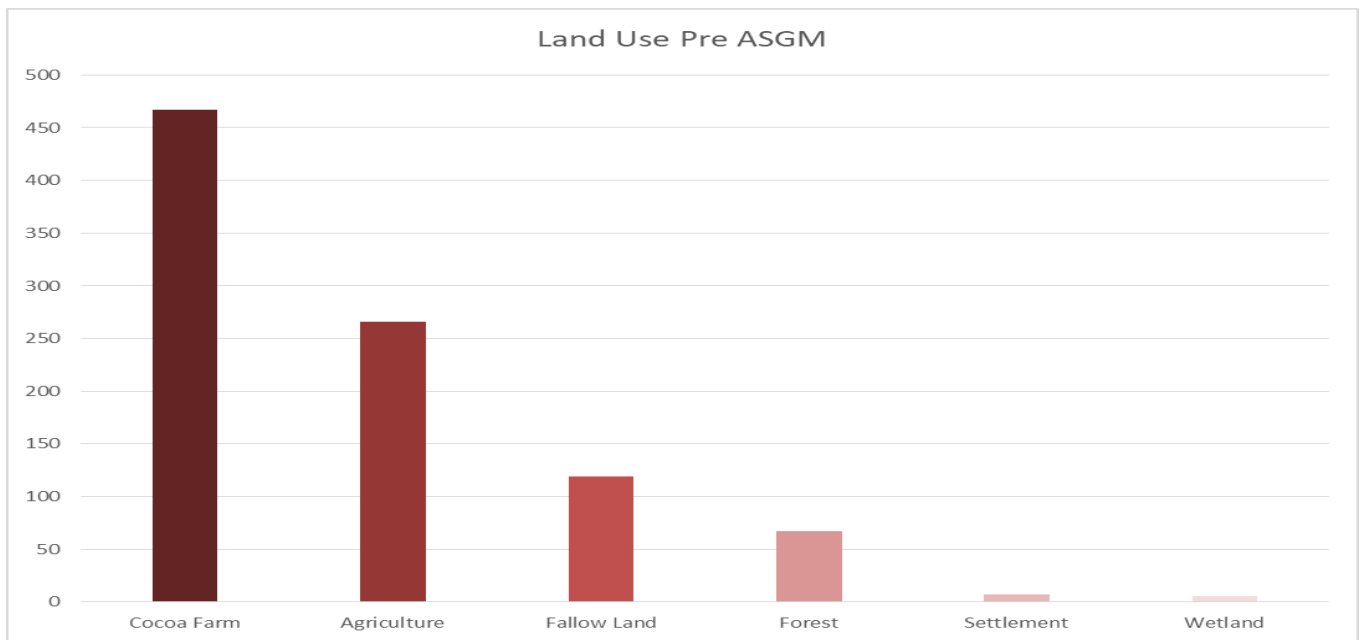


Figure 11: Data indicating the initial land use before ASGM.

It is important to emphasize that the separation of Cocoa Farming from other agricultural activities was a deliberate methodological choice. This distinction was made to facilitate a nuanced evaluation of the impact of Artisanal Small-Scale Gold Mining (ASGM) on cocoa farming operations, thereby providing detailed insights into the implications of mining on this critical agricultural commodity.

### 12.2.13 Equipment Utilization in ASGM Activities

The predominant equipment usage was found to be a combination of Basic tools, such as shovels, pickaxes, sluice boxes, and mortar and pestle, along with Mechanized tools, including excavators and water pumps. This combination was reported by 54% (341 respondents) of the total population surveyed. This hybrid approach signifies an integration of traditional mining practices with modern technology, indicating a dynamic and adaptable mining sector.

Concurrently, a significant proportion of the population, 30% (189 respondents), relied solely on Basic tools, such as shovels, pickaxes, sluice boxes, and mortar and pestle. This reliance on manual labor and traditional methods suggests that certain segments of the mining community continue to operate with minimal technological intervention.

In contrast, a smaller fraction of the respondents, 16% (102 individuals), indicated exclusive usage of Mechanized tools, specifically excavators and pumps. This subset of the mining community demonstrates a transition towards more capital-intensive and technologically advanced mining operations.

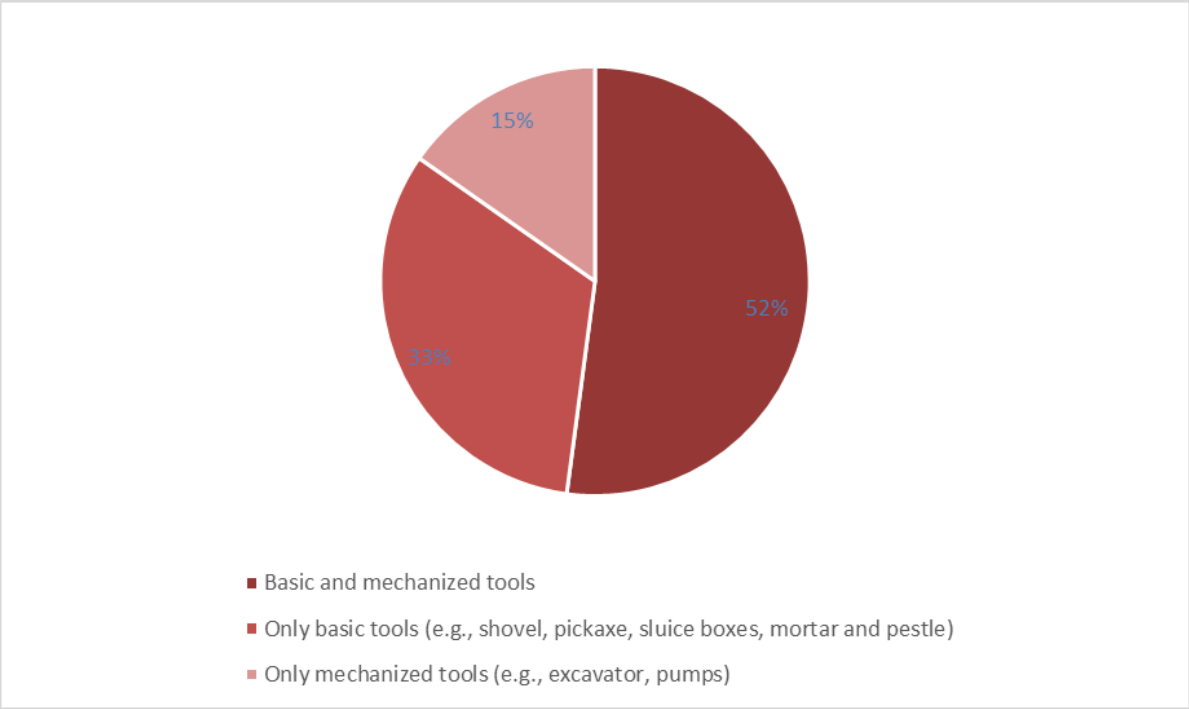


Figure 12: Equipment usage in ASGM, combining traditional and modern tools.

### 12.2.14 Miners' Practical Needs and Constraints

Examining the practical needs of the miners, the survey indicates that the most pressing need is for alternative livelihoods, with 56% of respondents expressing this as a key requirement. Improving income

from artisanal small-scale gold mining (ASGM) follows closely behind at 44%. The need for equipment and technology specific to ASGM is highlighted by 42% of respondents, while training to improve skills is a necessity for 29%. A total of 30% of respondents highlighted health and safety information and services as a critical requirement to optimize benefits from ASGM.

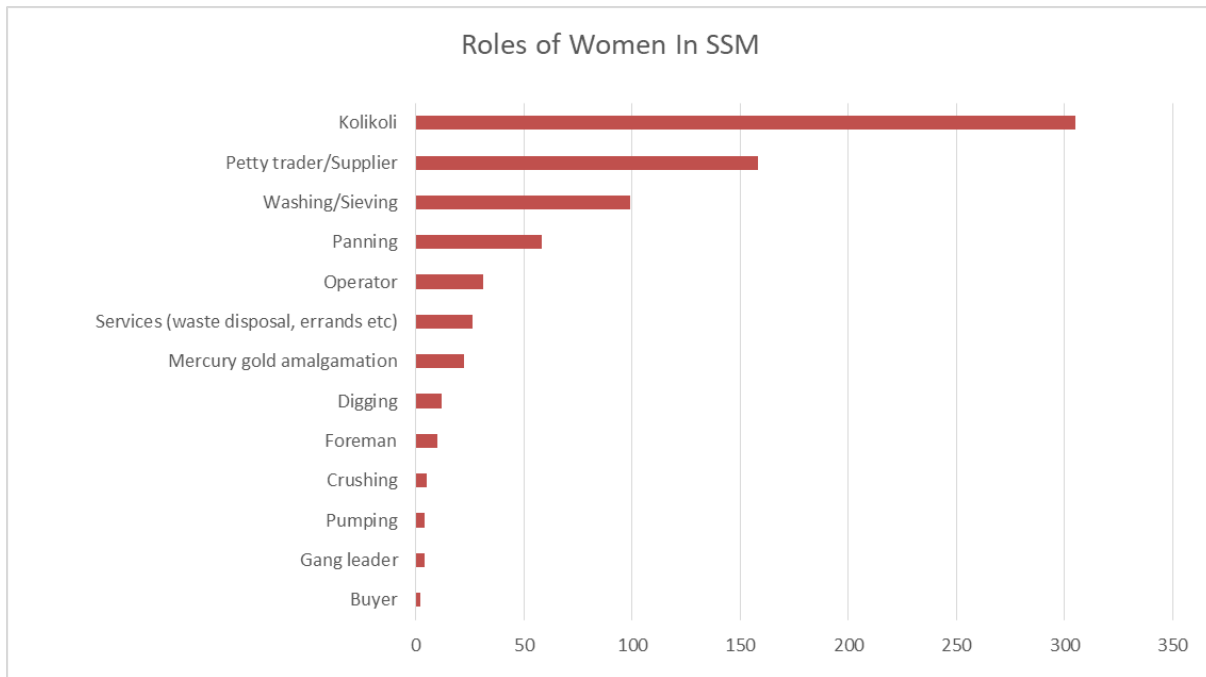
Regarding the constraints faced by respondents or their communities in accessing markets, the most pronounced issue is fluctuating prices, reported by 79% of participants. Poor prices and scale tempering were identified as key challenges by 55% and 37% of respondents, respectively. A significant 20% of respondents noted too much dependence on middlemen as a barrier to market access, while risk in transporting goods (robbery) was cited by 16% of respondents. Additionally, market information from formal channels was noted as a constraint by 7% of respondents.

Comparatively, it is evident that the miners' practical needs for alternative livelihoods and improved income are closely intertwined with the market constraints faced, particularly with fluctuating prices and poor prices being significant challenges. Addressing these constraints could potentially contribute to fulfilling the miners' practical needs, particularly in terms of improving income from ASGM.

### **12.2.15 Gender Perspectives and Women Participation In ASGM**

This section of the report delves into the gender dynamics and women's participation in Artisanal Small-scale Gold Mining (ASGM) activities, offering a comprehensive analysis based on the data collected. The data highlights the roles women play, the challenges they face, their needs, and the opportunities available to them in the ASGM sector. Through a comparative description, this analysis aims to shed light on the intricacies of women's involvement in mining activities, providing a foundation for informed decision-making and targeted interventions.

A significant 61% of respondents affirmed the participation of women in ASGM activities, indicating their substantial presence in the sector. In a closer look at the various roles women play in ASGM, the data reveals an interesting distribution. Women engaged in ASGM are involved in Kolikoli, a low-level form of gold processing, with 48.3% of respondents noting their participation in this activity. This practice entails women processing the residues left from the main mining operations, which is usually less profitable compared to other roles. This is followed by 25% of respondents indicating that women take on the role of petty traders or suppliers. Furthermore, women are also seen contributing as washers or Sievers (15.7%), panners (9.2%), Machine Operators (4.9%), and Foremen (1.6%). However, their presence in roles such as diggers, gang leaders, and pump operators remains minimal, each accounting for less than 2% of the responses. This insight aligns with the observed gender pay gap in ASGM. Women are more likely to be found in roles that are lower down the income hierarchy, usually Kolikoli, which explains why they often earn less compared to their male counterparts.



*Figure 13: Women's roles in ASGM, highlighting diverse participation.*

Delving into the challenges women encounter in ASGM, a noteworthy 21.8% of respondents shared that women are often grappling with lower income, while 23.6% shed light on the constraints imposed by cultural traditions. Furthermore, a significant 16.1% underscored the pressing issue of insufficient sanitary facilities at mining sites, and 18% pointed towards the limited availability of safety gear. A concerning 13.6% of respondents highlighted the prevalence of various forms of abuse, such as physical, sexual, and emotional abuses. Additionally, the quest for freedom to operate independently was underscored by 25%, and 8.2% of respondents drew attention to the challenges women face in accessing markets. The overarching themes here are the quest for autonomy and the cultural norms that might be hindering women from venturing into more lucrative avenues within the sector.



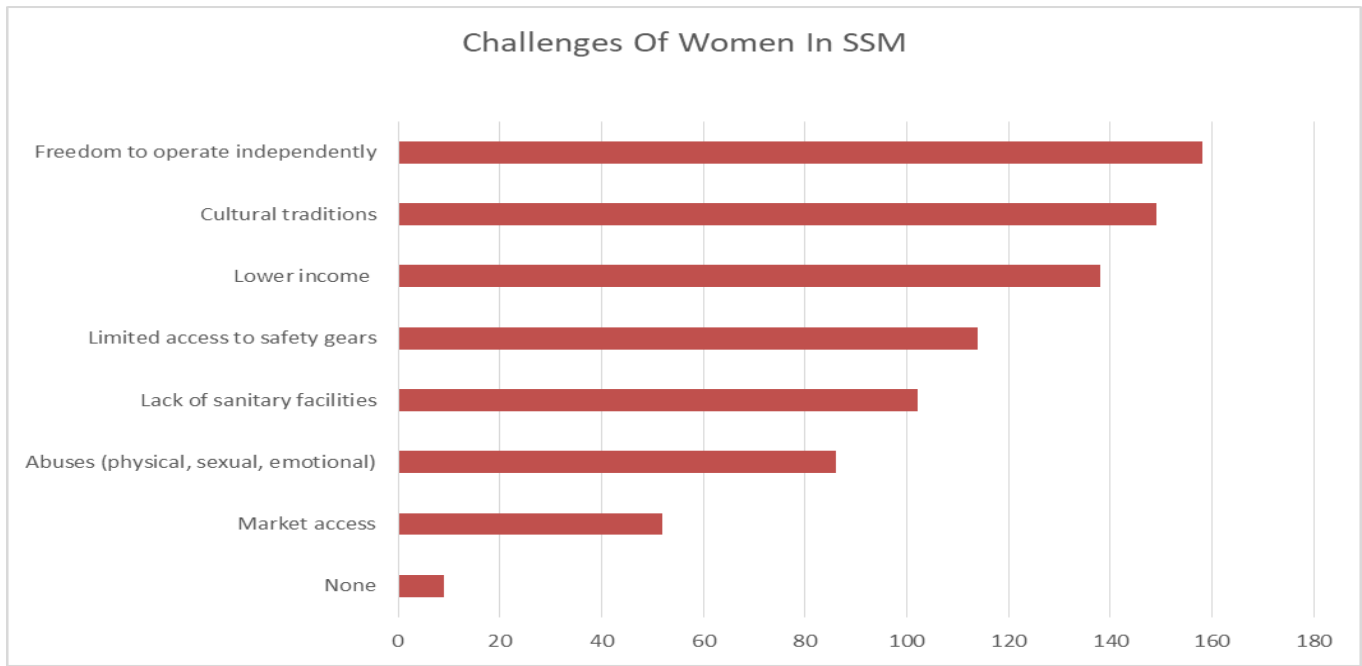


Figure 14: Women's needs in ASGM, emphasizing a desire for alternative livelihood opportunities and economic empowerment.

In terms of the needs of women in ASGM, 56.8% of respondents emphasized the importance of alternative livelihood opportunities for female miners. Other needs included creation of counselling units (4.1%), childcare centers (2.5%), second chance education (10.8%), prevention of gender discrimination at mining sites (9.3%), organizing females in miners' cooperative/association (7%), and healthcare services and safety information for female miners (15.2%). The focus on alternative livelihood opportunities indicates a desire for diversification and empowerment. Specific alternatives suggested included dressmaking (40.3%), catering (28.5%), hairdressing (37.3%), retailing (provision stores) (44%), bead making (16%), weaving (14.7%), and animal husbandry (1.9%). These options present a range of potential income-generating activities for economic empowerment of women.

Regarding interventions needed for women's empowerment in ASGM, respondents highlighted second chance education/skill training/vocational training to aspiring artisans (47.3%), training and organizing alternative livelihood opportunities (41.6%), labour saving technology/enhanced access to equipment and technology (8.4%), encouraging participation in policy and decision-making (3.2%), organizing female cooperatives - institutional support and services (6.8%), leadership training (1.4%), land, license and legal protection (2.4%), access to finance (34%), and access to information (5.4%).

Considering the extent of access of females to valuable assets in ASGM, the survey revealed that 23.9% of respondents acknowledged that women have ownership or rights over resources. Additionally, 9.3% of respondents recognized women's involvement in decision-making or being consulted about ASGM plans, and 15% reported women's access to credit. However, a notable 30.7% of respondents indicated no access to valuable assets, underscoring a disparity in asset ownership and decision-making authority among women in ASGM.

Lastly, respondents shed light on the opportunities for females in ASGM. They believe that participation in the sector could elevate women's social status (9.8%), empower them to financially support their households (46.7%), break gender barriers and pave new pathways for others (8.2%), provide decision-

making roles in ASGM communities (7.3%), facilitate access to ownership or rights over resources (11.2%), and enable diversification into other economic activities (42.9%). This data suggests that, despite the challenges faced, ASGM serves as a conduit for women's economic and social empowerment.

### 12.2.16 Environmental Impacts

In this section of the report, we delve into the environmental and food security impacts of Artisanal and Small-Scale Gold Mining (ASGM) on the communities surveyed. The data collected provides insights into the challenges faced by these communities, as well as the extent of the environmental degradation caused by mining activities. By examining the responses, we can better understand the ripple effects of ASGM on both the environment and food security in the affected areas.

Exploring the environmental repercussions of ASGM, a considerable 92% (577 respondents) highlighted land degradation as a significant issue in their community, underscoring the potential long-term consequences mining could have on the natural landscape. Deforestation and water pollution were identified as major concerns by 72% (452 respondents) and 75% (470 respondents), respectively, emphasizing the far-reaching effects of ASGM on environmental health. Furthermore, 31% (194 respondents) noted soil infertility, and 28% (172 respondents) observed the loss of biodiversity, indicating that local ecosystems and wildlife are being impacted by ongoing mining operations. A small fraction of respondents, 4% (21 respondents), perceived no significant environmental impact from ASGM.

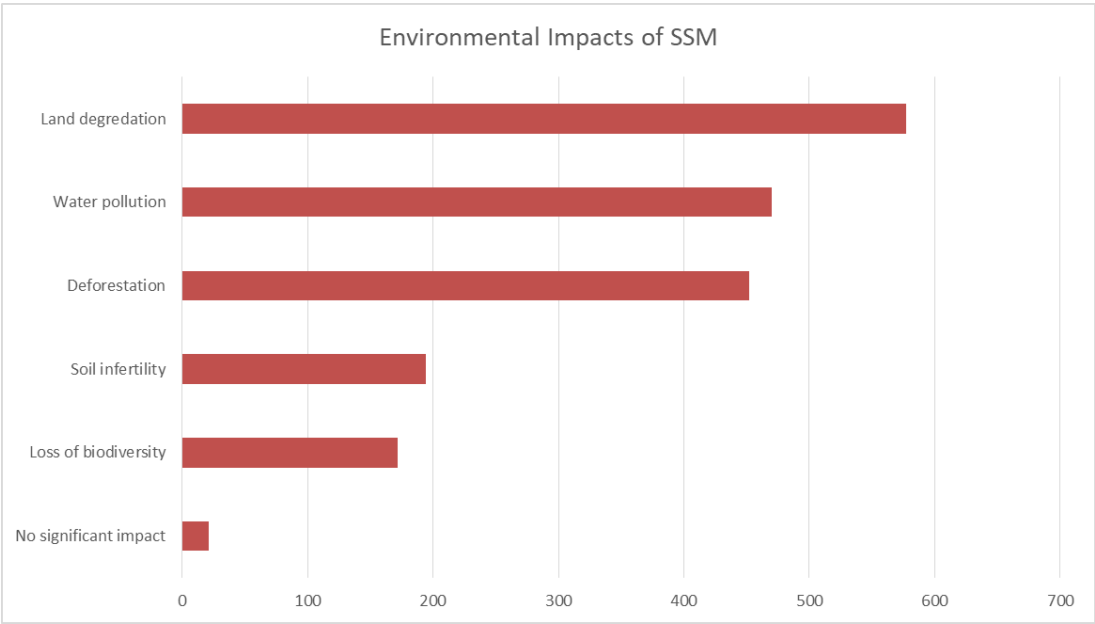


Figure 15: Environmental impact of ASGM, highlighting concerns like land degradation, deforestation, and water pollution.

Shifting focus to food security, the data revealed that most respondents, 85% (532 respondents), observed an increase in food prices, due to the disruption of agricultural activities and displacement of farmers from traditional lands. Reduced agricultural productivity was reported by 63% (393 respondents), highlighting a pressing concern for the communities involved in or affected by mining. Additionally, 33% (207 respondents) of respondents reported limited access to clean water for agricultural processes, while 35% (216 respondents) indicated displacement from traditional farmlands, underlining the extent of mining

encroachment on agricultural lands. Encouragingly, 8% (50 respondents) of respondents noted no significant impact on food security.

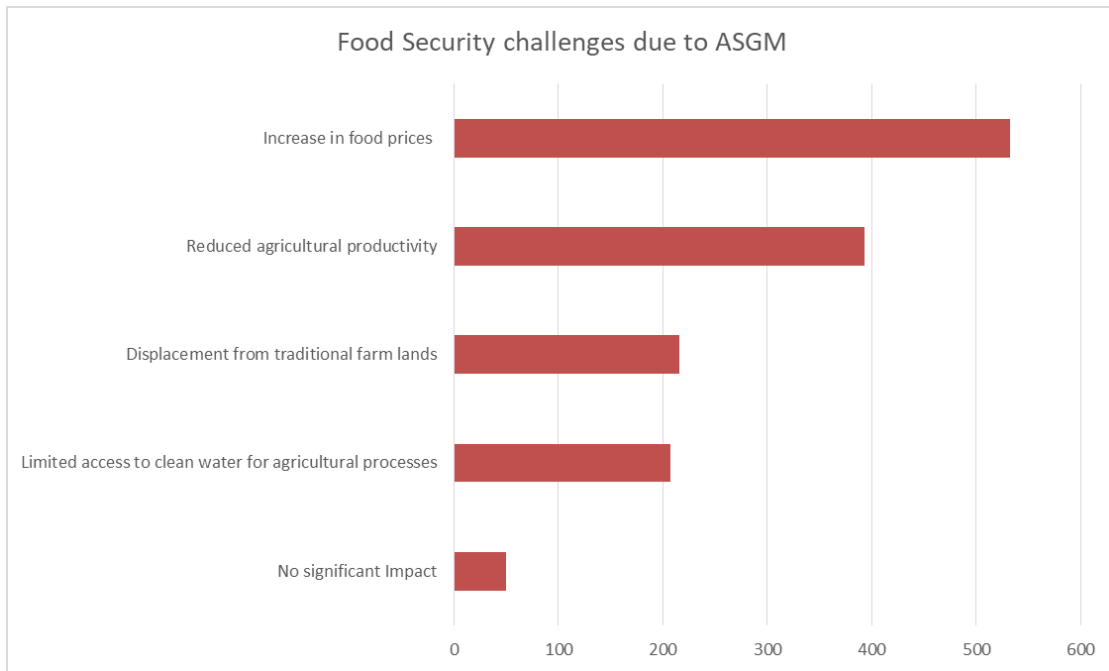


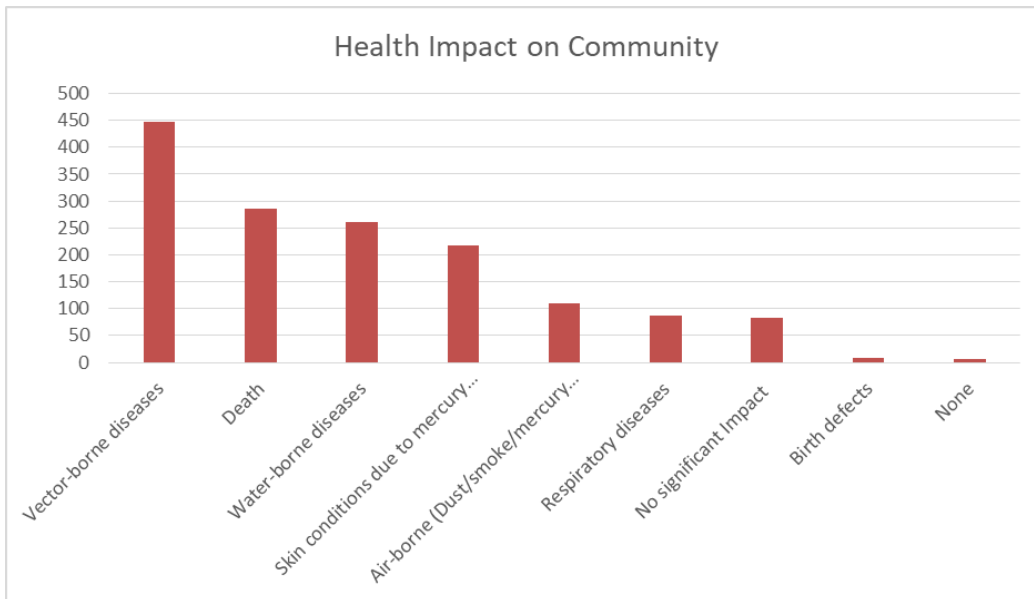
Figure 16: Mining's impact on food security on associated communities.

### 12.2.17 Impact on Health

In this section, we examine the health-related implications of ASGM on the community, as well as the specific health challenges faced by male and female miners at the sites. We also take a closer look at the types of healthcare services that respondents have accessed over the past year.

In terms of the community's health, vector-borne diseases stand out as the most prevalent health issue related to ASGM, affecting a considerable 70.6% (447 respondents) of the community. Additionally, water-borne diseases have impacted 41.4% (261 respondents), while air-borne issues, such as dust, smoke, or mercury inhalation, have affected 17.4% (110 respondents). This suggests that the environmental consequences of ASGM, such as water pollution and air pollution, have direct implications on the community's health.

A significant 34.6% (218 respondents) reported skin conditions due to mercury contamination of water bodies, highlighting the hazardous nature of mercury use in ASGM. Moreover, respiratory diseases were noted by 13.6% (86 respondents), and a small proportion of 1.4% (9 respondents) reported birth defects. A considerable 45.2% (285 respondents) reported deaths associated with ASGM, emphasizing the severe health risks involved. However, 13.2% (83 respondents) believe that there are no significant health impacts from ASGM activities on the community.



*Figure 17: Health impacts of ASGM on associated communities.*

Examining the health hazards faced by female miners, minor hazards such as burns and cuts were the most common, affecting 51.6% (326 respondents). Musculo-skeletal disorders, which involve chronic injuries and fatigue from physically demanding mining activities, were reported by 35.2% (222 respondents). Neuropsychiatric symptoms, including fatigue, insomnia, anorexia, shyness, withdrawal, depression, nervousness, irritability, and memory problems, were experienced by 25.9% (163 respondents), underscoring the mental health impact of ASGM.

Waterborne and vector-borne diseases were reported by 32% (202 respondents), while 24.2% (129 respondents) reported violence, and 18.6% (117 respondents) reported drug and alcohol abuse, highlighting the challenging and hazardous conditions at the mining sites. The prevalence of sexually transmitted infections, including HIV/AIDS, stands at 8.1% (51 respondents). Notably, respiratory diseases and snake bites affected 2.7% (17 respondents) and 4.2% (21 respondents) of female miners, respectively.

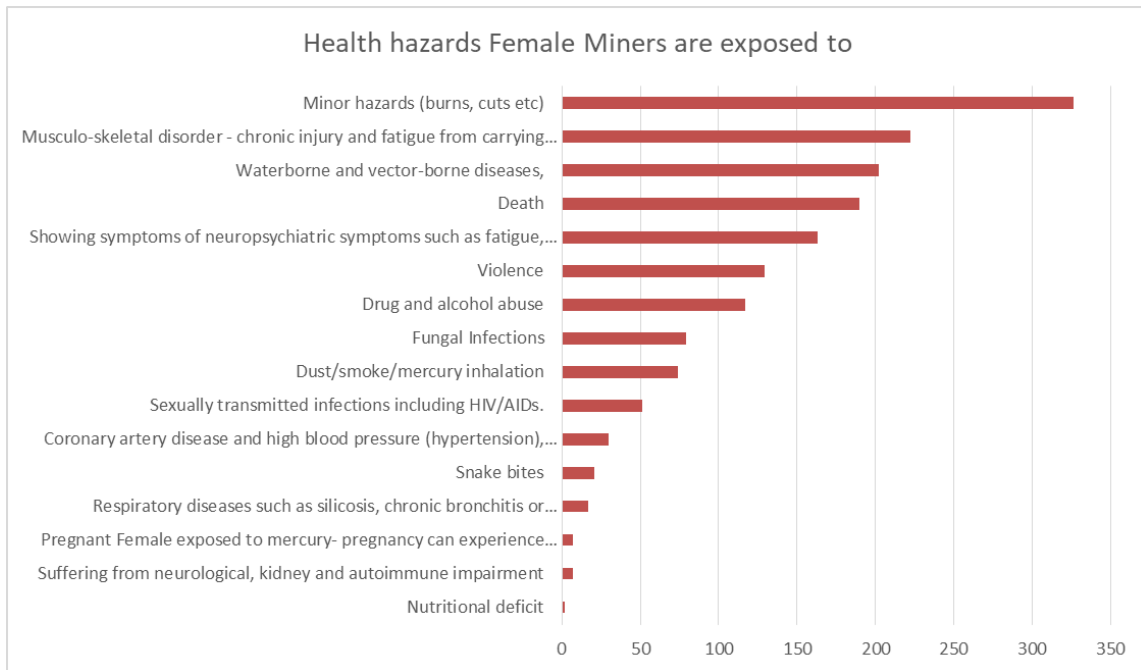


Figure 18: Health hazards for female miners.

Turning our attention to male miners, minor hazards such as burns and cuts were most frequently reported, affecting 85% (536 respondents). Musculo-skeletal disorders were reported by 67.8% (426 respondents), and neuropsychiatric symptoms were experienced by 44% (277 respondents). Waterborne and vector-borne diseases affected 50.8% (320 respondents), while violence was reported by 45% (283 respondents), and drug and alcohol abuse by 53% (334 respondents). The reporting of sexually transmitted infections, including HIV/AIDS, stood at 15.1% (95 respondents), while respiratory diseases were experienced by 10% (63 respondents), and snake bites by 6.3% (40 respondents).

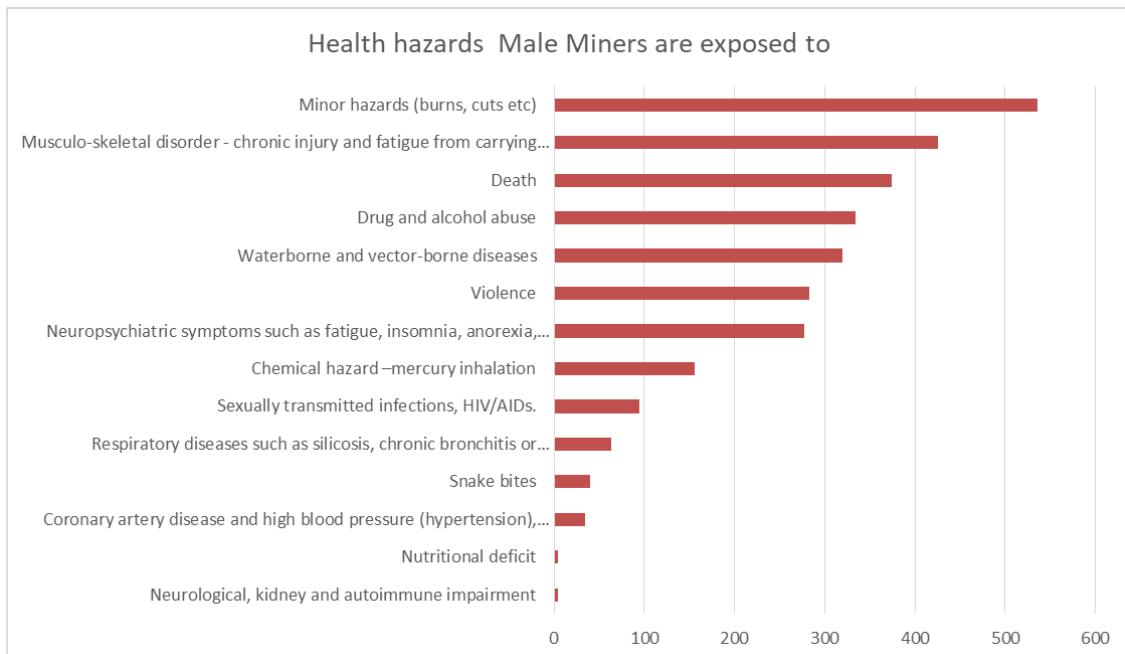


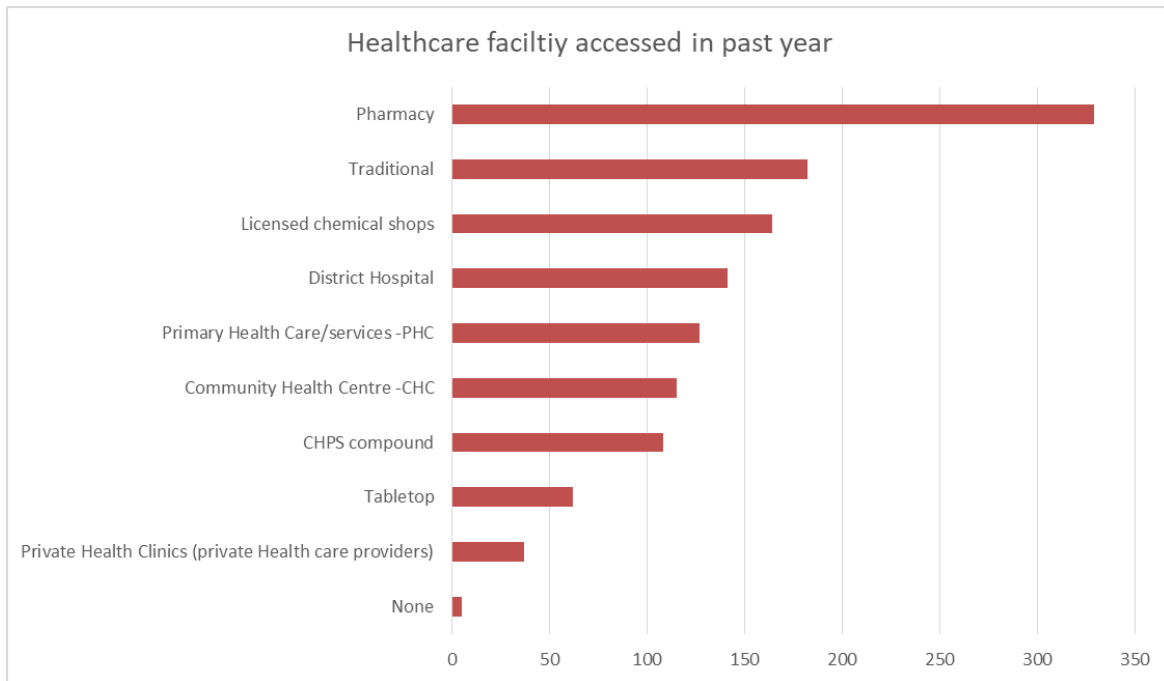
Figure 19: Health hazards for male miners.

*A notable 9.9% of respondents accessed tabletop healthcare services, underscoring the importance of informal healthcare providers' accessibility in the community, albeit with concerns about quality and safety.*

## 12.2.18 Access to Healthcare Facilities

The data on healthcare services accessed offers intriguing insights into the healthcare-seeking behavior of respondents. The high utilization of pharmacy services, reported by 52.3% (329 respondents), suggests that respondents might be relying on over-the-counter medication for immediate relief and self-medication. This could be indicative of the need for more comprehensive healthcare facilities and services within the community. The utilization of traditional healthcare services by 28.9% (182 respondents) points towards a significant reliance on traditional medicine and practices. This could be attributed to cultural beliefs, affordability, or accessibility factors. However, this also raises concerns about the effectiveness and safety of such practices, especially in the context of health issues related to ASGM.

Access to district hospitals, reported by 22.4% (141 respondents), indicates that some respondents are seeking more formal healthcare services. This is a positive sign, as it suggests that there is some level of trust and reliance on formal healthcare systems. However, the proportion is still relatively low, highlighting a potential gap in healthcare infrastructure and services in the region.



*Figure 20: Healthcare-seeking behaviors of respondents.*

The utilization of licensed chemical shops by 26.1% (164 respondents) and primary healthcare services by 20.2% (127 respondents) further reinforces the need for more accessible and comprehensive healthcare facilities. Community health centers and CHPS compounds, accessed by 18.3% (115 respondents) and 17.2% (108 respondents) respectively, play a crucial role in providing primary healthcare services in rural and remote areas. The lower utilization of these services could be due to factors such as distance, availability of services, or awareness among the respondents. Interestingly, tabletop healthcare services,

which typically include informal healthcare providers, were accessed by 9.9% (62 respondents). This highlights the role of informal healthcare providers in the community and their accessibility to the respondents. However, the quality and safety of such services remain a concern.

It is noteworthy that only a mere 0.8% (5 respondents) reported not accessing any healthcare services in the last year. This indicates a general awareness and need for healthcare services among the respondents. However, the nature and quality of healthcare services accessed need to be further explored to ensure the well-being of the community and miners.

# 13 MAPS AND VISUAL AIDS

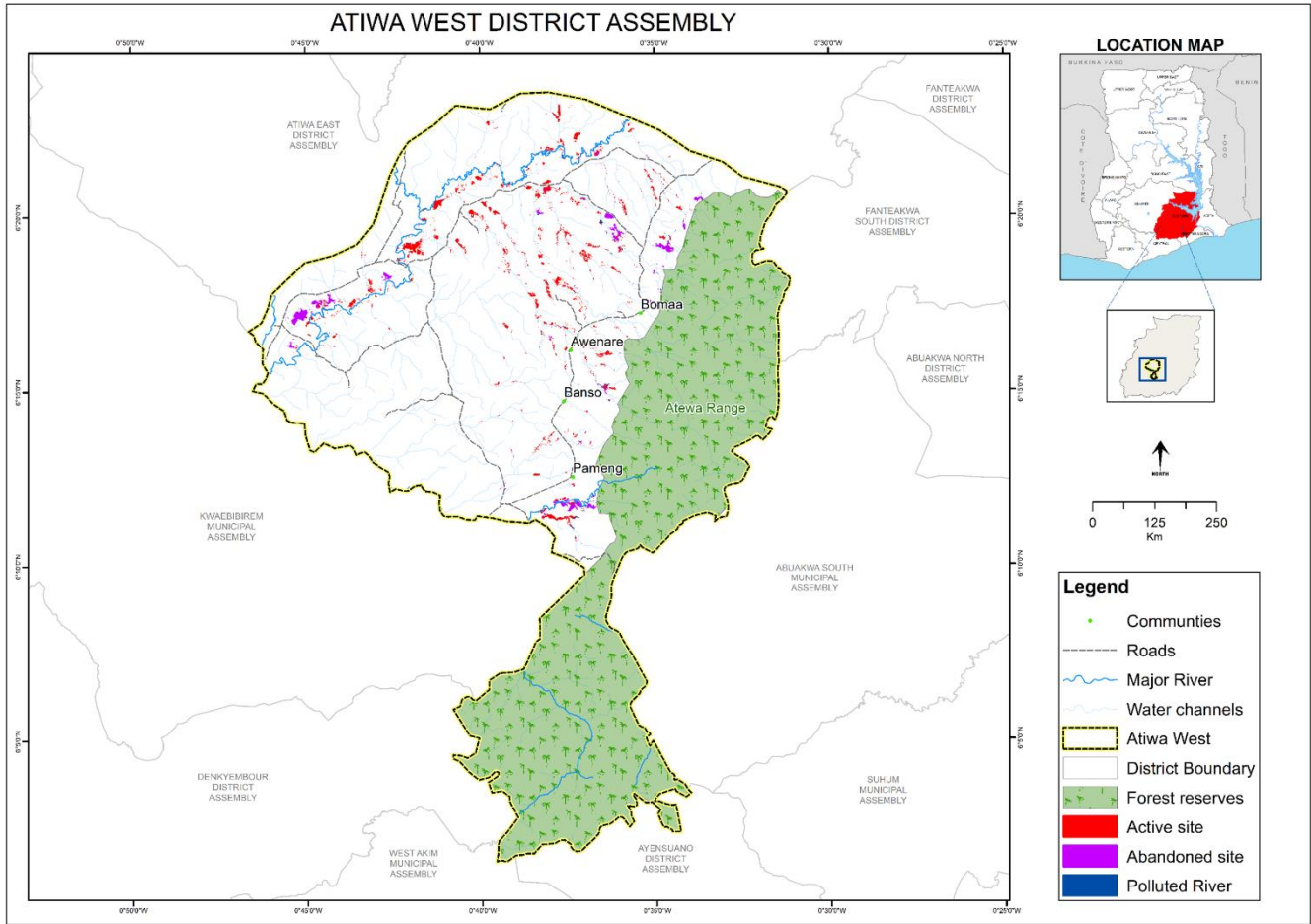


Figure 21: District map of Atiwa West District Assembly showing mining areas and communities engaged.

## 13.1 Atiwa West District Assembly

The Atiwa West District in Ghana, nestled within the Eastern Region, is known for its rich natural resources, particularly in the realm of small-scale mining, commonly referred to as "galamsey." This section provides an overview of mining activities within the district, highlighting key communities and their involvement in this vital sector.

### 13.1.1 Surveyed Communities Engaged in Mining

The Atiwa West District in Ghana, encompassing communities like **Bansa**, **Bomaa**, **Awenare**, and **Pameng**, has witnessed the significant contributions of mining activities to the local economy. These contributions are essential for understanding the role of small-scale mining in the district's socio-economic landscape.

**Employment and Livelihoods:** Small-scale mining in these communities has been a vital source of employment for the local population. Many residents have found job opportunities directly within the



mining sector, working as miners, laborers, equipment operators, and in various supporting roles. This has been especially crucial in areas where alternative employment options are limited.

**Income:** Generation: Mining activities, particularly gold extraction, have provided a source of income for individuals and families in these communities. The income earned from mining has supported not only basic needs but also educational expenses, healthcare, and other essential aspects of life. It has been an economic lifeline for many households.

**Local Economic Growth:** Mining has contributed to the growth of local businesses and enterprises in these communities. Businesses providing goods and services related to mining, such as equipment suppliers, transport services, food vendors, and more, have prospered due to the demand created by mining activities. This economic growth has a ripple effect on the broader community.

### **13.1.2 Challenges**

While the contributions of mining to the Atiwa West District are evident, it is crucial to recognize the challenges associated with these activities. The mining sector has brought both benefits and difficulties to the district, and addressing these challenges is essential for sustainable development.

**Environmental Degradation:** One of the most pressing challenges is the environmental impact of mining. Small-scale mining, often characterized by informal practices, has led to deforestation, land degradation, and pollution of water bodies. The use of chemicals in the extraction process and improper disposal of mining waste have deteriorated the quality of water sources, posing threats to aquatic ecosystems and human health. The consequences of environmental degradation are far-reaching and require stringent measures to mitigate.

**Lack of Regulation:** In some cases, the absence of comprehensive regulations and effective enforcement mechanisms has allowed for uncontrolled mining activities, often referred to as 'galamsey.' This informal and illegal mining exacerbates environmental challenges and circumvents regulatory oversight. The lack of effective regulation contributes to a cycle of non-compliance.

**Health and Safety Concerns:** Small-scale miners often work under conditions that lack proper safety measures. This poses risks to the health and safety of miners, including exposure to polluted waterbodies, accidents in unsecured mining pits, and inadequate protective equipment. Addressing health and safety concerns is critical for protecting the well-being of those engaged in mining activities within this district.

In conclusion, mining in the Atiwa West District has made substantial contributions to employment, income generation, and local economic growth. However, it is essential to address the challenges posed by environmental degradation, regulatory gaps, and health and safety concerns. Sustainable and responsible mining practices, along with effective regulation, are necessary to maximize the positive impact of mining while mitigating its adverse effects in the district.

### **13.1.3 Conclusion**

Atiwa West District in Ghana is a region rich in mineral resources, and this has attracted both legal and illegal small-scale mining activities. While mining offers economic opportunities for residents, it also presents significant environmental and socio-economic challenges. The preservation of the region's natural resources and biodiversity remains a critical concern. Effective regulation and sustainable mining practices are essential to ensure the well-being of both the community and the environment in Atiwa West District.

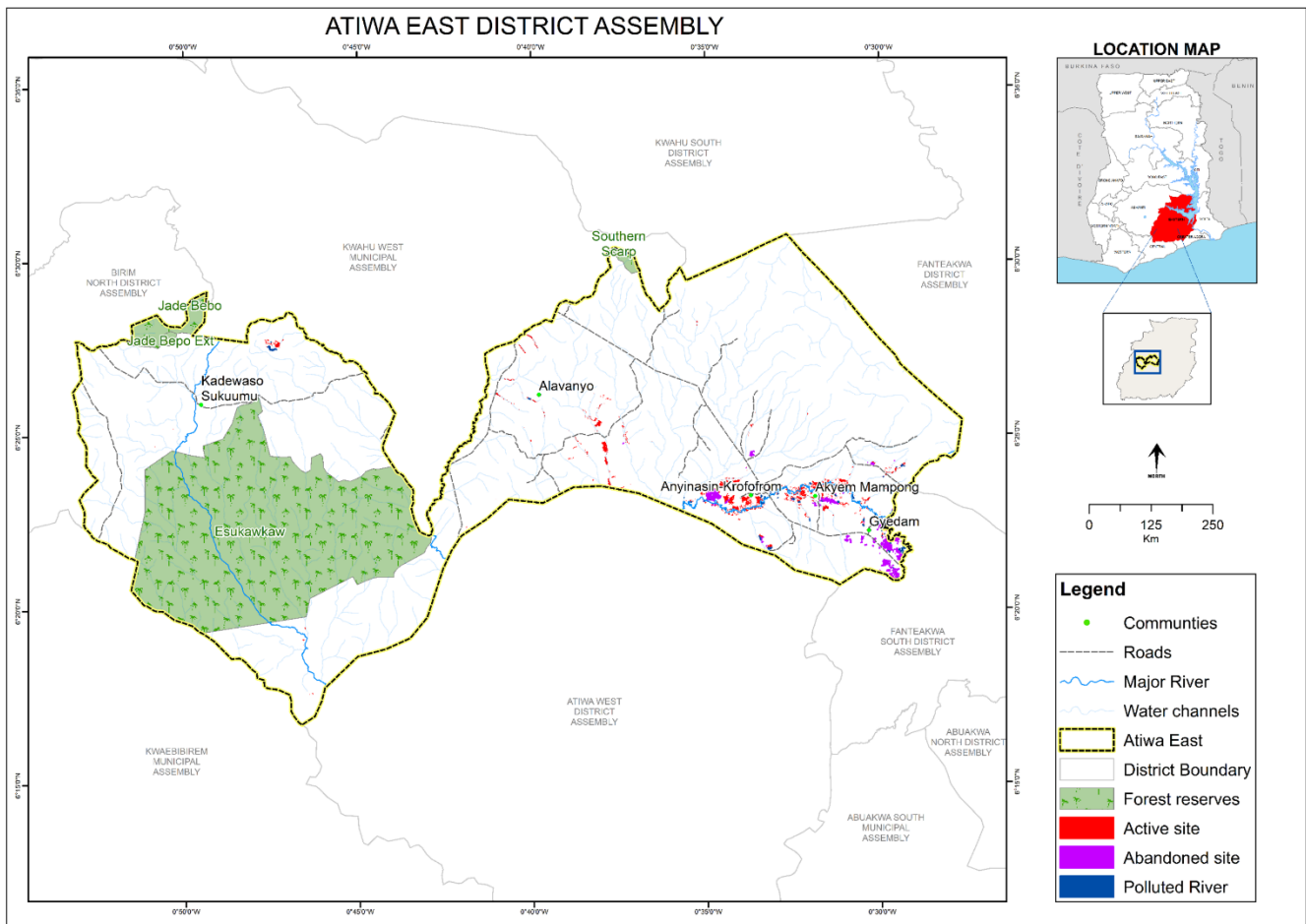


Figure 22: District map of Atiwa East District Assembly showing mining areas and communities engaged.

## 13.2 Atiwa East District Assembly

Small-scale mining in Atiwa East, Ghana, plays a crucial role in the local economy but is fraught with challenges that demand attention. This comprehensive report explores the multifaceted issues affecting both the environment and the socio-economic dynamics of towns such as Akyem Mampong, Akrofofo, and Ankaase (Gyedam).

### 13.2.1 Environmental Impact

The environmental repercussions of small-scale mining in Atiwa East are profound, with a prevalent issue being land degradation. Many mining sites in the district remain abandoned and unrehabilitated post-operations, contributing to persistent land degradation, soil infertility, and a lack of biodiversity. The adverse effects extend to water bodies, including rivers and streams in towns like Gyedam, where pollution from mining chemicals poses threats to aquatic ecosystems and human health.

### **13.2.2 Socio-economic Disruptions**

The socio-economic fabric of communities engaged in small-scale mining is significantly disrupted. Fluctuations in income levels and employment patterns are particularly pronounced, especially for individuals involved in both farming and mining activities. The interdependence of these two sectors creates challenges for maintaining stable livelihoods, contributing to economic uncertainties for the residents.

### **13.2.3 Town-specific Examples**

**Akyem Mampong:** This town faces challenges related to the depletion of agricultural land due to mining activities, affecting the traditional livelihoods of farmers.

**Akrofofo:** Increased water pollution in the local streams adversely impacts the availability of clean water for both domestic use and agricultural purposes.

**Ankaase (Gyedam):** The socio-economic landscape witnesses' fluctuations as residents engaged in both farming and mining navigate uncertainties, impacting income stability, high food pricing and overall community well-being.

### **13.2.4 Conclusion**

To address these challenges, a robust regulatory framework is imperative. Implementing stringent measures for land reclamation post-mining, controlling the use of harmful chemicals, and promoting sustainable mining practices are essential. Moreover, supporting diversified livelihoods and providing alternative income sources for affected communities can enhance their resilience to economic uncertainties. This report underscores the urgent need for a holistic approach to address the challenges associated with small-scale mining in Atiwa East. By acknowledging the specific concerns of each town and implementing sustainable practices, the region can strive towards a balanced coexistence of mining activities and the preservation of its environmental and socio-economic integrity.

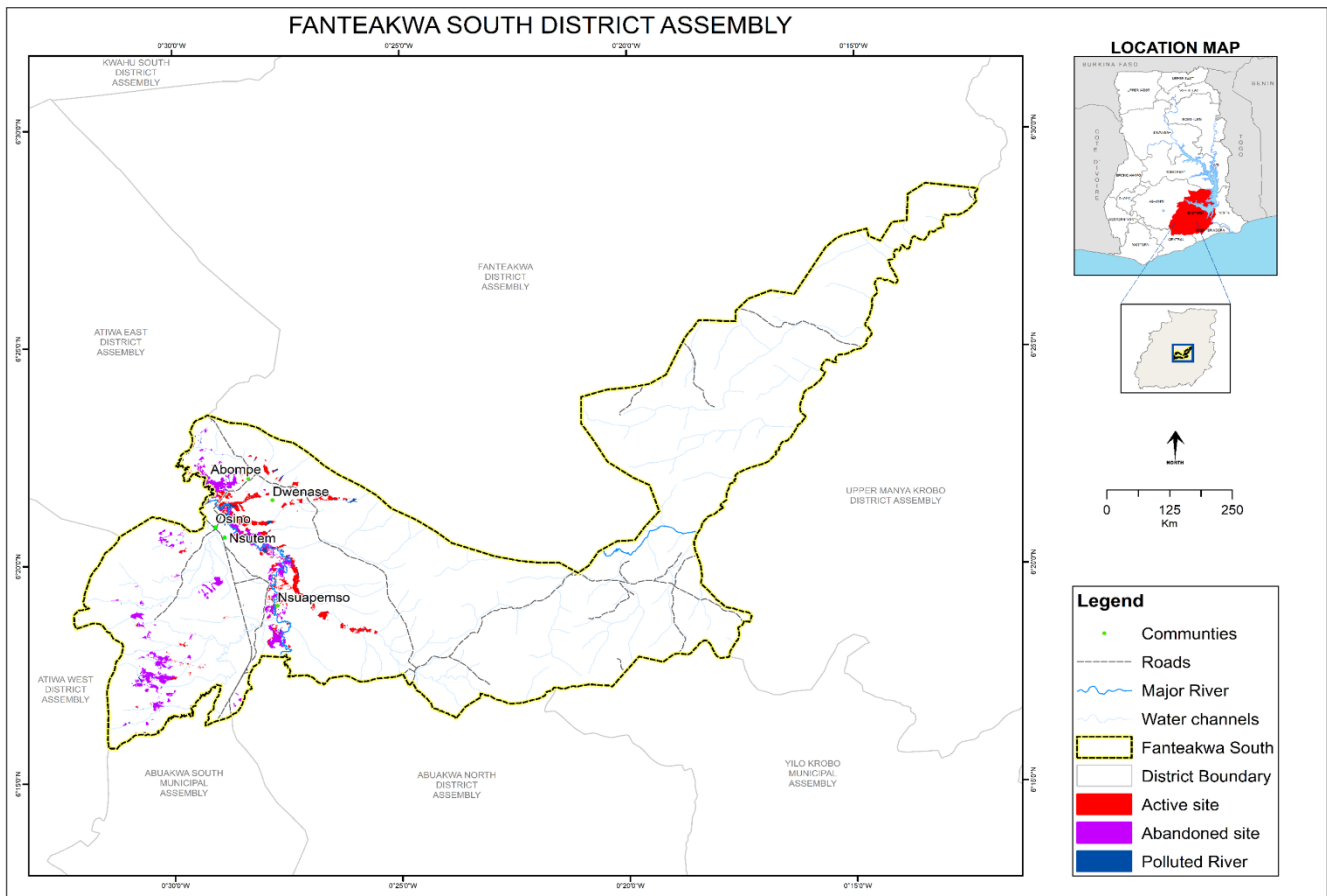


Figure 23: District map of Fanteakwa South District Assembly showing mining areas and communities engaged.

### 13.3 Fanteakwa South District

In towns like Abompe, Dwenase, Nsutem, Osino, and Nsuapemso nestled within Fanteakwa South, small-scale mining presents a host of challenges. These communities, each with their own distinct characteristics, grapple with issues that profoundly impact both the local environment and the well-being of residents.

#### 13.3.1 Town-specific Example

Visible signs of land degradation linger in these towns, where abandoned mining sites serve as reminders of the toll on the environment. In Abompe, questions arise about the sustainability of local ecosystems post-mining. Dwenase faces challenges related to soil infertility, while Nsuapemso deals with the loss of biodiversity, emphasizing the need for comprehensive land reclamation efforts.

Water pollution is a pressing concern for Osino and Nsuapemso, where the discharge of chemicals from mining operations not only threatens aquatic life but also jeopardizes the health of communities reliant on these water sources. This underscores the urgent need for robust environmental management practices tailored to address specific challenges in each community.

### **13.3.2 Conclusion**

Navigating these challenges in Abompe, Dwenase, Nsutem, Osino, and Nsuapenso underscores the need for tailored and sustainable solutions. Understanding both the aspirations and vulnerabilities of these localities is essential for crafting effective strategies that address the unique challenges faced by each community.

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