

## SMALL-SCALE MINING IMPACT ON RURAL LIVELIHOOD



Ashesi University College

### ASSESSING THE IMPACTS OF ILLEGAL SMALL-SCALE MINING (*GALAMSEY*) ON COCOA FARMING AND RURAL LIVELIHOOD: THE CASE OF AMENFI WEST DISTRICT OF GHANA

By

Martey Laari

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Supervised by: Kajsa Hallberg Adu, Ph.D.

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**Declaration**

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:.....

Candidate's Name: Martey Laari

Date: 25/03/2018

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by Ashesi University College.

Supervisor's Signature:.....

Supervisor's Name: Kajsa Hallberg Adu, Ph.D.

Date: 25/03/2018

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### Abstract

For years, Ghana has been confronted with illegal small-scale mining commonly known as *galamsey*. It is alleged that cocoa farmers are relinquishing their farmlands for *galamsey*, however, as many people in the cocoa farming communities depend on cocoa farming as their primary source of income, it raises questions as to why farmers would want to abandon their farms for *galamsey*. As a result, this thesis is aimed at investigating the motivations for *galamsey* and how the practice impacts cocoa farming as well as the living conditions of people in the mining communities.

The study was undertaken in Amenfi West District in the Western Region of Ghana where both cocoa farming and illegal mining operations coexist. The data for the study was collected from cocoa farmers in the mining communities using qualitative research techniques such as interviews and questionnaires.

The results revealed that cocoa farmers face challenges because of *galamsey* such as; labor shortages, water pollution and bites from harmful insects bred from the abandoned mining sites. Also, *galamsey* operations reduce land quality and cause black pod disease which ultimately reduce the output of cocoa farms close to the mining sites. On the positive side, *galamsey* provides employment and improves transportation network in the mining communities. The major reasons that encourage *galamsey* were identified as higher short-term income, availability of idle lands, poor cocoa yield, and low price of cocoa. Recommendations from the study include; supporting farmers to maintain healthy cocoa farms, land reclamation, and public education, but also facilitating the process to ease acquisition of mining license by the *galamsey* operators.

*Keywords*; Illegal small-scale mining, *galamsey*, livelihoods, cocoa farming, impact

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## CHAPTER 1: INTRODUCTION

### 1.0 Introduction

Poverty eradication is a challenge for the 21<sup>st</sup> Century. About 767 million people live in extreme poverty with an equivalent income of less than \$1.9 per person at the international poverty line (United Nations, 2017), which inhibits their ability to access clean drinking water, food and sanitation. The search for wellbeing and freedom has been a great concern for heads of states, governments, and high representatives and has led them to focus on strategies to end poverty. In effect, an effort to end poverty in all its forms everywhere by 2030 is an international priority and the focus of Sustainable Development Goals number 1 (United Nations, 2015 ).

In the pursuit of poverty alleviation and general wellbeing, individuals engage in different economic activities that provide them with a livelihood. Ultimately, agriculture has been recognized as a source of livelihood for nearly half of the world's population (World Bank, 2008). In Tanzania for instance, the sector provides direct livelihood to 80% of the total population (UNDP, 2015). It also generates 55% of Malawi's GDP, and supports the livelihood of 80% of Malawians along the value chain (Lotz-Sisitka & Urquhart, 2014). Similarly, the sector is a prominent supporter of most developing countries, sustaining lives at both the individual and macro levels.

According to the Food and Agriculture Organization of the United Nations (2015), 54% of Ghana's working population in the year 2014 was actively engaged in agriculture as their predominant economic activity for a living. Approximately 70% of the rural people in the country derive their livelihood from farming activities (García, 2016). For a large number of people in agriculture, those in the tropical belt of the country engage in cocoa farming as their primary source of income. That is, six out of the ten regions in Ghana produce cocoa (Essabra-Mensah, 2016),



which supports livelihoods for smallholder farmers in the rural areas and indirect employment along its value chain in the urban areas (Knudsen, 2013).

Despite cocoa's significant contribution to livelihood, the cocoa sector has undergone long cycles of success and failures. As pointed out by Essegbey and Ofori-Gyamfi (2012), Ghana was the leading producer of cocoa in the world before 1970 but lost the position afterward due to stumbled output. Production gradually rebounded in the mid-1980s resulting from the introduction of economywide reforms, which increased output close to double between 2001 and 2003 (Kolavalli & Vigneri, 2011). Ultimately, the destabilizing production also translated into fluctuating wellbeing of the farmers. For instance, the rebound in the cocoa output after 2002 contributed to growth and poverty reduction (Coulombe & Wodon, 2011).

Apart from Agriculture, small-scale mining also serves as a source of economic activities at the local levels where minerals are discovered. Although there is lack of certainty with regards to the total number of employment created by the sector, it is estimated that 13 million people across 30 countries directly engage in small-scale mining, which also supports the livelihood of over 80 million people along its value chain (Hentschel, Hruschka, & Priester, 2003). In this respect, the sector serves as a different source of rural livelihood especially for the people in the small-scale mining areas. Artisanal and small-scale mining refers to mining operations by individuals, groups, families or cooperatives with minimal or no mechanization, often practiced in the informal sector.

Recognizing the potential of the sector in providing employment, the government of Ghana legalized small-scale mining in 1989 (Ministry of Lands and Natural Resources , 2017). The Minerals and Mining Act 2006 (Act 703) further explains artisanal and small-scale mining as mining operations over an area of land in accordance with the number of blocks prescribed. The

duration permitted to perform the small-scale mining is five years and the license is renewable upon satisfactory performance during the first term (Mineral Commission, 2015). Also, the small-scale mining was legalized as the preserve of Ghanaians alone (Ministry of Lands and Natural Resources, 2017). However, foreign nationals found their way into the sector with sophisticated machines which sped the rate of extraction across the mining communities (Burrows & Bird, 2017). As a result, illegal small-scale mining activities increased after the legalization which was meant to regulate the mining activities to sustain the environment (Ministry of Lands and Natural Resources, 2017). The illegal small-scale gold mining is termed as “*Galamsey*”, which emanated from jumbling Ghanaian local parlance, “Gather-am-and-sell” (Duodu, 2013).

Amenfi West District is one of the municipalities in Ghana where both legal and illegal small-scale mining activities dominate. The district has become one of the central points for illegal small-scale gold mining operations (Mantey, Nyarko, & Owusu-Nimo, 2016). It has about 10 licensed exploration companies, and several illegal gold miners (Wasa Amenfi West District Assembly, 2012). Consequently, the communities and individuals are affected by the various forms of mining activities in one way or the other. As a source of economic activity to the people, the illegal mining operation also comes with its attendant life-threatening effects.

### **1.1 Problem Statement**

While farming is the traditional source of livelihood for most people in the rural communities in Ghana, *galamsey* has been regarded as a means to an end, especially for residents in communities where the minerals are discovered (Yeboah, 2014). Amenfi West District of Ghana is not different from the national observation. Ghana Statistical Service (2014) estimates that 71.6% of the people in the Amenfi West District support their livelihood from agriculture, which is mainly through cocoa production. On the other hand, small-scale gold mining, mostly

illegal (Mantey, Nyarko, & Owusu-Nimo, 2016; Wassa Amenfi West District Assembly, 2012), has emerged as another form of the predominant economic activities for the natives and migrants in the district. Unfortunately, small-scale mining and cocoa farming do not seem to interact in a positive and complementary manner to serve as alternative sources of livelihood, but the emergence of the former has been considered as a threat and national issue. The co-existence of the two has received mixed reactions from stakeholders because it is believed that most of the small-scale mining activities are usually carried out illegally and unregulated, which tends to cost the nation more than its accruing benefits.

Although illegal small-scale mining has received criticism from several areas, Ghana Cocoa Board is more particular about its impact on cocoa productivity, trusting that farmers are destroying their farmlands for illegal gold mining (Ghana Cocoa Board, 2017). As a result, the cocoa sector, which forms the significant part of agriculture is seen to be the most area affected by illegal small-scale mining. Therefore, it invokes thoughts of examining why people are motivated to give off their legally known source of livelihood for illegal small-scale mining.

Also, cocoa farming is of national interest due to its significant contribution to poverty alleviation, which gives reason to examine how illegal small-scale mining impacts the sector and the wellbeing of people in the mining communities. The question then is, how does illegal small-scale mining interplay with cocoa farming and what is its net effect on rural livelihood? What considerations are made by individual cocoa farmers when deciding to transfer into small-scale mining or refrain from doing so? Thus, if it is imperative to undertake cocoa farming alongside small-scale gold mining, then how can we ensure a positive interaction so that the latter will serve as a diversification opportunity to enhance rural livelihood? The above questions necessitated this

research. It aims at examining the impacts of the emergence of illegal small-scale gold mining on cocoa productivity, which is the main source of rural livelihood in most mining communities.

## **1.2 Research Questions**

The following research questions are considered in the quest to examine the impacts of the emergence of illegal small-scale gold mining on cocoa farming, the main source of rural livelihood in Amenfi West District of Ghana.

- How does illegal small-scale mining interplay with cocoa farming as the primary economic activity for people in the mining area?
- What is the net effect of illegal small-scale gold mining on individual livelihood in the mining communities?
- Why would a cocoa farmer choose to do small-scale mining over farming cocoa?

## **1.3 Research Objectives**

### **1.3.1 General Objective**

To identify and examine how illegal gold mining (*Galamsey*) influences cocoa farming and rural livelihoods.

### **1.3.2 Specific Objectives**

The following sub-objectives would facilitate the achievement of the broad objective stated above.

- To investigate local communities' perceptions of how *Galamsey* interplay with cocoa farming, to ascertain the benefits and challenges that it presents to cocoa productivity as their traditional source of livelihood.

- To improve understanding of the livelihood facing illegal small-scale mining communities in Ghana by taking into consideration the effects of *galamsey* on livelihoods.
- To gain insights into some of the reasons why farmers would move or not move into *galamsey*
- To put forward policy recommendations for sustainable economic activities in the rural areas.

#### **1.4 Relevance of the Study**

Before the recent military intervention to curb *galamsey*, some measures have been adopted in the past to control the issue, which includes the deployment of security task forces to flush out illegal miners before the legalization of small-scale mining in 1989 (Ministry of Lands and Natural Resources , 2017). Several measures including military intervention and alternative livelihood projects have also been implemented over the years with the view of addressing illegal small-scale mining in Ghana. Notwithstanding the previous efforts, the illegal small-scale mining is still on the surge. It suggests that more negotiation processes are needed to understand the impact of illegal small-scale mining on the livelihood of the direct stakeholders, which may result in a collective action to curb the menace.

This paper would examine the impacts of illegal small-scale mining by focusing on the livelihood of individuals living in the mining communities in Amenfi West District of Ghana. The reasoning for this research is that understanding individuals' views and their perspectives on how the illegal mining activities influence their lives would help to implement policies. It will also provide the necessary support for collective action that would help to bring a balance between cocoa farming and small-scale mining.

Also, the research is pertinent because it will help government and policymakers to understand households' perspectives on how illegal small-scale mining impact the lives of rural communities and the factors that would encourage them to move or not move into mining. This would assist in the implementation of collective action to solve the problem. The direct interaction of the primary stakeholders (the cocoa farmers in this study) would also provide in-depth knowledge on the livelihood in the mining area, serving as a source of available information to inform policy-making towards the achievement of the United Nations Sustainable Development Goals, particularly poverty alleviation and food security.

Also, this research will also contribute to the literature on the impacts of small-scale mining on farming by focusing on its interaction with cocoa farming activities using the views of cocoa farmers in the Amenfi West District.

### **1.5 Conceptualizing Livelihood and Theoretical Framework**

Sustainable livelihood is a broad goal for poverty reduction (Krantz, 2001). The concept of livelihood has been used in development arena to conceptualize all set of activities that the poor undertake for their living (Adato & Meinzen-Dick, 2002). Mazibuko (2012) defines livelihood as the means through which people gain their living. Livelihood also encompasses the properties, access to and benefits derived from all set of activities that determine and support the living of individuals and households (Ellis, 1998). In effect, “all activities involved in finding food, searching for water, shelter, clothing and all necessities required for human survival at individual and household levels are referred to as livelihood” (Mphande, 2016, p.17).

The sustainable livelihood framework acknowledges that people engage in different activities for their livelihood, which should be regarded as equally important for their wellbeing. The framework is underpinned in Sen’s concept of freedoms which holds that individuals should

have the freedom to make choices to pursue the lives they deserve (Mazibuko, 2012). The freedom to lead different lives reflects the person's capability to achieve various valuable functioning as part of living (Sen, 1993). Sustainable livelihood concept is therefore related to Amartya Sen's capability approach as it also invokes questions about the kind of assets or capabilities that people have to fulfill their lives (Mazibuko, 2012). Irrespective of how assets and capabilities are defined, the sustainable livelihood framework argues that livelihood can be sustained if people use their assets to develop strategies whose outcome generate the assets and improve those strategies from experience (LaFlamme, 2010).

Apart from accepting the fact that variety of activities define livelihood, the sustainable livelihood approach also considers the sustainability of those activities. According to Chambers and Conway; "A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base" (1992, cited in Scoones, 2009, p.175). Thus, an attempt to gain a living should also focus on sustaining the environment (Mazibuko, 2012). In other words, livelihood is sustainable when it can meet the needs of the present generation without compromising the ability of the future generation.

In the context of small-scale mining in the rural mining communities in Ghana, the search for income or employment can be viewed as a livelihood opportunity when individuals consider it as an opportunity to improve their wellbeing (Mazibuko, 2012). This is supported by Ellis & Biggs (2001) who contest that viable rural livelihoods could be achieved without undue preference to farming as the only answer to rural poverty. However, the environmental threats and inconvenience posed by unregulated small-scale mining activities also raise questions as to whether the rural mining activities fit into the context of sustainable livelihood. In most rural

mining communities, the mined lands are not reclaimed. Consequently, the loss of farmlands and the negative impacts of the unregulated mining activities will have some adverse effect on rural livelihoods.

## **1.6 Overview of the Chapters Ahead**

### Literature Review

The chapter analysis the work already done in the field of small-scale mining and its effects on agriculture and rural livelihood. It also points out the gaps in the existing studies and emphasizes on the focus to fill the gap.

### Methodology

This chapter illustrates the processes and steps involved in the study and the tools needed to complete the research. It also justifies the method, and defines the sample and the approach of data collection

### Analysis and Findings

The chapter critically analyzes the information collected and interprets the results.

### Conclusions and Recommendations

The chapter summarizes the findings from the entire study and out of which the relevant recommendations are made.



## **CHAPTER 2: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter focuses on a general overview of the relevant literature on artisanal and small-scale mining operations in Ghana. A brief historical overview of small-scale mining in Ghana is presented followed by the socio-economic benefits of small-scale mining on the local communities, which is usually the motivation and cause for illegal small-scale mining. The review attempts to identify the various issues associated with illegal small-scale mining concerning its impacts on cocoa farming, the environment, and other socio-economic activities in the Ghanaian mining communities. This will help to identify how the mining operation directly or indirectly affects the socio-economic activities and the general living conditions of people living in the areas where illegal mining activities are prevalent.

### **2.1 Historical Overview of Small-Scale Mining in Ghana**

Gold constitutes about 90% of Ghana's minerals revenue (Mineral Commission, 2015) and its mining is done on both large-scale and small-scale. Small-scale mining describes the mining activities by individuals and groups who operate using basic tools with little or no mechanization (Hentschel, Hruschka, & Michael, 2002). The World Bank Group describes small-scale gold mining as "a poverty-driven activity, typically practiced in the poorest and most remote rural areas of a country by a largely itinerant, poorly educated populace with few employment alternatives" (Gilbert & Albert, 2016, p.114). Ghanaians' engagement with the small-scale gold mining started before colonization which dates back as far as the fifth and the sixth century BC (Ministry of Lands and Natural Resources , 2017).

Small-scale mining is also used interchangeably with artisanal and small-scale mining, and it occurs in two different means: the legal operations and the illegal operations (Bansah, 2017).

The unlawful form of the artisanal and small-scale mining operation is popularly known in Ghana as *galamsey* (Duodu, 2013). Legality is the only factor that distinguishes the registered small-scale mining from *galamsey* (Adda, 2014) but the prevalence of illegal small-scale mining in Ghana makes it difficult to differentiate between the legal and illegal mining activities. As a result, the recent definition of *galamsey* includes four major categories of miners. It consists of those operating without a license, miners with a permit but using unapproved tools and methods to mine, licensed miners who do not reclaim the degraded lands and people who have sub-leased their acquired mining license to foreigners to mine (Samuel, Oladejo, & Adetunde, 2012). In this study, *galamsey* is also used interchangeably with illegal small-scale mining, or informal small-scale mining.

As a poverty-driven activity, the small-scale mining operations continued as an informal activity for about 32 years after Ghana's independence (Ministry of Lands and Natural Resources, 2017). Recognizing the potential of the sector in poverty alleviation, the government of Ghana passed the Small-Scale Gold Mining Law (PNDC Law 2018) in 1989 to legalize and control the operations of the small-scale gold miners and create proper marketing channels for gold (Mineral Commission, 2015). Before legalizing the small-scale mining, security task forces were employed to stop all identified illegal miners from their operations. However, the mining law has not been able to achieve its full aim as illegal mining activities continue to storm all over the country's mining communities. Most small-scale gold miners continue to operate without a license because they view the registration process as long and frustrating (Ghana News Agency, 2015).

In contrast to the initial definition of small-scale mining as the use of basic equipment, its operations evolved to include the use of sophisticated machines (Mineral Commission, 2015). This is attributed to the influx of foreign nationals into the sector who come in with the machines and

funding needed to expand the illegal mining activities. Apart from the indigenous illegal miners, Ghana attracted about 50, 000 other illegal miners as at 2017 (Burrows & Bird, 2017), which led to the expansion of *galamsey* operations in the country. Consequently, the environmental threats and social issues from the unregulated mining issues scaled up in tandem with the expansion of illegal mining operations.

Responding to the public outcry over the massive destruction by the illegal mining activities, the government of Ghana banned all forms of small-scale mining on the 1<sup>st</sup> of April 2017 (Ministry of Lands and Natural Resources , 2017). Nevertheless, illegal small-scale miners continue to operate in secrecy. As a result, several cases of illegal mining have been reported since the ban in April. For instance, 17 people were declared dead at the mining site on the 6<sup>th</sup> July after they had been trapped underground (Modern Ghana, 2017). Similarly, 14 men were found entangled in a mining pitch on July 5 (Abdulai, 2017). Also, 90 illegal miners were apprehended by the government's anti-illegal mining task force in August (News Ghana, 2017). These, including several alleged cases of illegal gold mining, indicate that *galamsey* has not responded to the ban.

## **2.2 Causes of *Galamsey***

This section discusses the reasons or the various factors that encourage the practice of illegal mining in Ghana. As already indicated, agriculture is the predominant occupation in the rural communities in Ghana. However, people engage in other economic activities such as basketry, fishing, animal rearing, charcoal burning, and other quick income-generating activities to supplement their incomes from farming. For those in the communities with mineral deposits, *galamsey* operation represents their swift gratification source of income. As a result, employment is the principal motivation that gives rise to *galamsey* operation in Ghana. The persistent increase

in the price of gold has incentivized people living in the legal mining areas to focus on *galamsey* activities as their primary source of livelihood (Citifmonline, 2014). While the legal mining sector employs only 30,000 people, an estimated number of 170,000 people engage in *galamsey* operation in Ghana (Samuel, Oladejo, & Adetunde, 2012).

Often described as a poverty-driven activity, artisanal and small-scale mining is considered as a livelihood diversification strategy (World Bank, 2013). The sector supplements agriculture as the source of living for the rural population in Senegal (Persaud, Telmer, Costa, & Moore, 2017). In Sierra Leone, lack of a viable source of living leaves the rural population with no choice but to resort to informal gold and diamond mining in the search for revenue and food security (Carier & Burge, 2011). Similarly, poverty is one of the factors that push individuals into *galamsey* in Ghana (Aidoo, 2016). The allegations that poverty pushes people to *galamsey* brings the argument that illegal small-scale mining cannot be eradicated without providing an alternative source of living for the illegal miners (GhanaWeb, 2017).

While some people engage in illegal small-scale mining because they do not have any other means to support their basic needs, others are motivated by greed and ‘get-rich-quick’ mentality (Ministry of Lands and Natural Resources , 2017). It is alleged that persons within authority such as the chiefs in the mining communities secretly promote *galamsey* due to the benefits that accrue to them (Abdulai, 2017). Much like some chiefs, customary owners and opinion leaders also take money to condone *galamsey* activities in their communities (Ministry of Lands and Natural Resources , 2017). Some politicians have also been reluctant to condemn illegal mining activities over the years because of political expediency (Aidoo, 2016).

Another factor that encourages *galamsey* is the perceived complexity of licensing process (Ministry of Lands and Natural Resources, 2017; Hilson, 2012; Hilson & Potter, 2005). Though

argued as a poverty-driven activity, the process of acquiring a license for small-scale mining in Ghana is perceived to be expensive and reserved for only the wealthy people. The poor in the mining communities who need the permit the most find it difficult to afford the costly process of acquiring the license because of poverty. Consequently, the bureaucracies coupled with the cost of seeking a license and other setbacks induce many small-scale gold miners to operate illegally (Bansah, 2017). Similarly, McQuilken and Hilson (2016) contest that centralized authority is a barrier to formalizing the small-scale mining in Ghana as the local authorities whose mandate is to support the prospective miners through the regulation process do not have the real power to do because the power is still vested in the high authorities, which further lengthens the process.

Also, weak enforcement of rules and regulations by the relevant institutions is considered as a contributing factor to the surge in illegal mining activities in Ghana (Ministry of Lands and Natural Resources, 2017). Therefore, the relaxed and improper enforcement mining laws embolden many Ghanaians to connive with their Chinese accompaniments to expand their illegal mining activities (AgricInGhana Media, 2017; Fick, 2017).

### **2.3 Effects of *Galamsey* on Cocoa Farming**

The issue of *galamsey* in Ghana has generated heated debates and discussions in the newspapers, radio, television, and the internet. Through the various platforms, different stakeholders have expressed different views on *galamsey* operations in the country. People hold different frames about the incidence of illegal mining activities, which are usually associated with agriculture, society or the environment (Onumah, Leeuwis, Boamah, & Salifu, 2013). While some attribute positive reasons to the cause such as employment, farmers and other stakeholders in agriculture consider *galamsey* as a menace and a threat due to its effects on arable land, farm output and food security (Danyo & Osei-Bonsu, 2016). In fact, the Ghana Cocoa Board has been one of

the major complainers of the menace of *galamsey* (Ghana Cocoa Board, 2017), in that *galamsey* creates factors that discourage or impact negatively on cocoa farming.

In the first place, *galamsey* presents pull factors as a more attractive investment. Some individuals are attracted to informal mining because they perceive that mining will offer them the opportunity to “get rich quick” (Hilson, 2012). That is, illegal mining comes with quick cash flow that attracts the communities (Aneani, Adu-Acheampong, & Sakyi-Dawson, 2017). In like manner, the prospect of getting “quick money” motivates some cocoa farmers to relinquish their farmlands for illegal gold mining. Cocoa farmers from the Wassa Amenfi East District in the Western Region of Ghana, for instance, maintain that cocoa does not provide them with much economic returns to match their time which makes them direct their focus to *galamsey* (MyjoyOnline.com, 2017). As at 2014, the illegal miners had invaded and destroyed between 1.5 and 1.7 million hectares of cocoa lands for mining (GhanaWeb, 2014).

Apart from presenting money to incentivize farmers, *galamsey* impacts negatively on cocoa farming in other ways. Firstly, it affects cocoa farming by constraining the labor available to cocoa farmers (Aneani, Adu-Acheampong, & Sakyi-Dawson, 2017; Onumah, Leewis, Boamah, & Salifu, 2013). By interviewing 78 persons from Wassa Akropong in the Western Region of Ghana, Onumah, Leewis, Boamah and Salifu (2013) find that *galamsey* decreases the availability of labor and increases the cost of laborers who are willing to be hired by the cocoa farmers. This is because the illegal miners offer higher and attractive wages than the cocoa farmers, which results in a reduction in the supply of labor to the cocoa farmers. Consequently, the labor shortage compels cocoa farmers to increase their wage offering.

Moreover, *galamsey* has adverse effects on the health of the cocoa trees which results in low yield. A study by Boateng, Codjoe and Ofori (2016) shows a negative impact of *galamsey* on

cocoa farming in Atiwa District of Ghana. The farmers who have their cocoa farms close to the mining areas observe early dropping of immature pods, wilting and yellowing of leaves because the *galamsey* activities deplete the topsoil which supports the healthy growth of plants (Aneani, Adu-Acheampong, & Sakyi-Dawson, 2017). Other destructive activities that *galamsey* imposes on cocoa farms close to the mining sites are the creation of open tunnels and flooding of farmlands (Onumah, Leeuwis, Boamah, & Salifu, 2013).

#### **2.4 The Influence of *Galamsey* on the Environment**

As already explained, small-scale mining provides livelihood opportunities for the rural population in developing countries, but its effects on the environment have also been well-documented (Persaud, Telmer, Costa, & Moore, 2017; Kitula, 2006; Hilson, 2002). It is usually challenging to improve the environmental impacts of the artisanal and small-scale mining due to the absence of regulation and formalization of their activities (Hentschel, Hruschka, & Priester, 2003). The damaging environmental impacts associated with the unregulated mining activities include effluent dumping, unrehabilitated excavations, improperly stored waste, dust emissions, deforestation, acid mine, river siltation and the release of chemicals such as cyanide and mercury (Eftimie, et al., 2012).

According to Kitula (2006), environmental pollution is the major problem resulting from informal mining activities in the Geita District of Tanzania. The disposal of mine waste contaminates the air and the water bodies, which imposes dangers on the human health, livestock and wildlife biodiversity. In addition to deforming the landscape with trenches in Senegal, the artisanal small-scale mining has polluted the water bodies with mercury (National Geographic, 2017). Similarly, the repercussions of *galamsey* in Ghana are mostly realized from mercury pollution and land degradation (Hilson, 2002). Schueler, Kuemmerle, and Schröder (2011) use

Landsat satellite images to examine the land cover changes in Ghana and found that surface mining results to 58% deforestation and 45% loss of farmlands within the mining concessions.

### **2.5 Impact of Illegal Small-Scale Mining on Other Socio-Economic Activities.**

This section examines how *galamsey* influences other economic activities, health, food security, cost of living and social issues in the communities near the mining areas.

With regards to its influence on other economic activities, small-scale mining, both legal and illegal, generates income which helps smallholder farmers to support their operations. According to Hilson (2011), small-scale mining generates revenue that is used to acquire fertilizers, agro-chemicals and other farm inputs that are not subsidized by the government. Research by Hilson & Garforth (2013) identifies that small-scale gold mining generates significant revenues to many households in the Southern part of Ghana, which empowers them to address their different needs including the management of their farms to achieve the desired level of output. In contrast, Egyir, Baffoe-Bonnie, Otchere, Asante, and Oku-Afari (2015) find that small-scale mining instead worsens the plight of farmers. Their study results indicate a 20% deterioration of the farmers' health within a decade of mining. The farmers affirm this finding with complaints relating to their skin and other health implications associated with their involvement in *galamsey*.

Contrary to the findings of Hilson (2011) that small-scale mining generates income to support farming activities, Danyo and Osei-Bonsu (2016) contest that *galamsey* impacts negatively on food crop production. According to their study result, the major *galamsey* regions in Ghana recorded lower food productivity and with a corresponding higher food prices. That is, food becomes scarce as more people opt for mining instead of crop cultivation. In effect, *galamsey* reduces food security. This is consistent with the argument that *galamsey* depletes the topsoil



which supports the crop yield (Aneani, Adu-Acheampong, & Sakyi-Dawson, 2017) and creates pull factors that incentivize farmers to relinquish their farmlands for mining (Hilson, 2012).

Yakovleva (2007) notices that one of the negative effects of *galamsey* is the high cost of living within the mining areas. As *galamsey* operations attract people from different parts of the world to the mining communities (Burrows & Bird, 2017), the necessities such as food, clothing, and accommodation become expensive. Excess demand over supply creates shortages which result to increase in prices. Likely, the resultant effect of low farm output coupled with the increased number of people in the mining communities further escalate the costs of food crops. This result is confirmed by Danyo and Osei-Bonsu (2016) who discovered that *galamsey* area recorded high Consumer Price Indices than the national average. The increased prices of goods imply that the welfare of the residents in the mining communities who are not earning the higher revenues from *galamsey* would become worse as they can buy fewer commodities with their normal low earnings. Nevertheless, the high food prices, on the other hand, will go a long way to benefit the local food producers who did not forgo their farming for mining.

Moreover, *galamsey* increases social vices in the mining areas (Adu-Gyamfi, Brenya, & Abakah, 2016; Addai & Baiden, 2014, Eshun, 2005). The movement of people from different backgrounds with diverse values to the mining communities usually leads to social vices such as prostitution and child labor. As pointed by Eshun and Mireku-Gyimah (2002), a *galamsey* operation has caused the local population growth in Tarkwa district because most people migrate to the mining communities in the district in search of employment opportunities. Consequently, the increased population leads to conflicting customs and traditions with increased social vices resulting in drug abuse and prostitution with its attendant sexually transmitted disease. The *galamsey* activities also cause child labor, truancy and school dropout in the *galamsey* operating

communities. Rahman (2011) for instance notes that the abundance *galamsey* operations in Obuasi recruit children, which exposes them to health risks and other dangerous conditions.

## 2.6 Conclusion

Ghana has a long history of small-scale mining activities. Recognizing the potential of the sector concerning employment and revenue generation, the government of Ghana legalized the small-scale mining in 1989 to regulate the activities to sustain the environment. However, illegal mining has spread across the mining communities in the country because of the perceived difficulties of obtaining the mining license by Ghanaians together with the entry of foreign nationals into the sector. Moreover, there are several news reports with cases of increasing illegal mining operations in the country despite the recent (2017) employment of security force to combat the issue. Amenfi West District is one of the communities where illegal mining is prevalent, but no studies have been conducted so far to determine how the illegal mining impact lives in the mining communities in the district. As a result, this thesis would help to understand the reasons for *galamsey* and its effects on livelihoods in Amenfi West District. It is also necessary for more studies to understand how the *galamsey* activities affect the living conditions of individuals and households, who are usually the direct participants and the major contributors to the cause of illegal mining. The stakeholders considered in this case are the cocoa farmers who have been alleged to be the major contributors to the cause of *galamsey*. The argument is that, understanding individuals' perspectives on how *galamsey* impacts their lives would help in the negotiation process to the solution.

## CHAPTER 3: METHODOLOGY

### 3.0 Introduction

The study investigated how illegal small-scale mining impacts cocoa farming as the primary source of livelihood and other living conditions of the rural population in the Amenfi West District. The research was approached as both exploratory and descriptive. Exploratory research gives researchers the opportunity to explore deeper and familiarize themselves with the problem being studied (Jupp, 2011). This approach helped to understand the participants' experience living in the mining communities. Descriptive research, on the other hand, enumerates and describes data about the population without establishing a causal relationship (Singh, 2015). This chapter describes the place of study, the research design, the sample size, the sampling techniques, the research limitations and the ethical consideration. The methodology is summarized in figure one below.

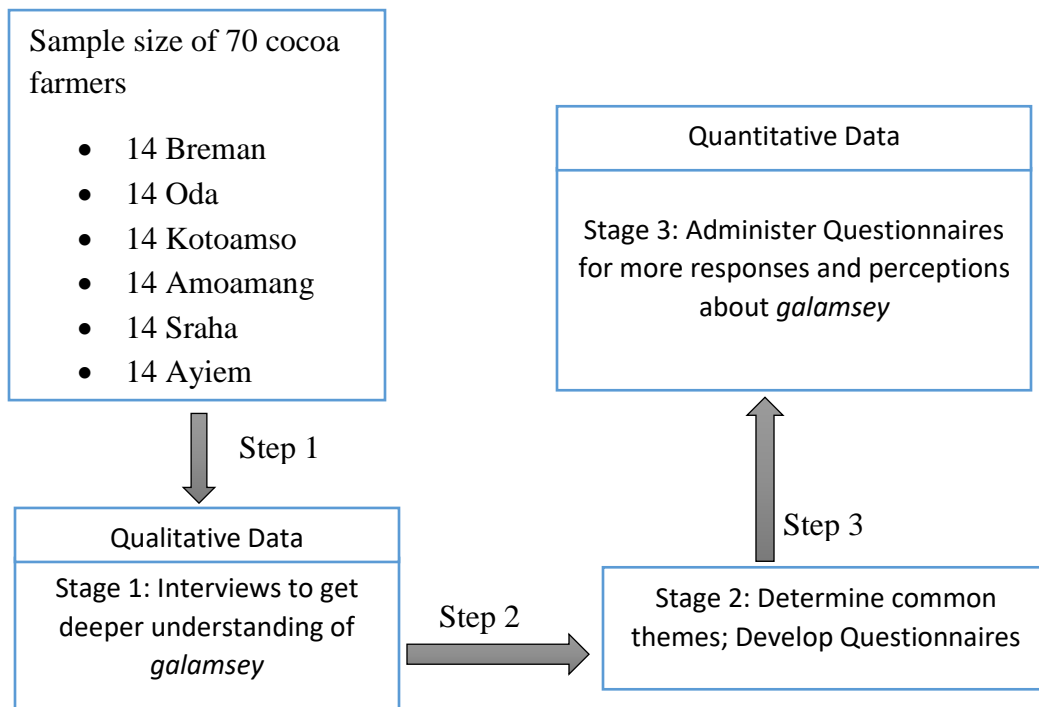


Figure 1. Summary of methodology. Author's field note, 2017.

### **3.1 Research Scope – Place of Study**

The research focused on Amenfi West District which is located in the middle part of the Western Region of Ghana. According to Ghana Statistical Service (2014), the district was formerly part of Wassa Amenfi West District but was established under the Legislative Instrument 1757 in 2004 with Asankrangwa as its capital. Amenfi West District has a population of 92,152 and a total land area of 1,448.56 square kilometers (Ghana Statistical Service, 2014).

Amenfi West District was chosen because it has a higher proportion (59.72%) of rural dwellers than the national average (49.72%) where a greater number (71.6%) of the people depend on farming for a living (Ghana Statistical Service, 2014). However, the district has also been noticed as one of the central points for illegal small-scale mining operations in Ghana (Mantey, Nyarko, & Owusu-Nimo, 2016). Despite the prevalence of the illegal small-scale mining in the district, no study has been conducted to investigate into the factors that contribute to the surging illegal mining and its impact on livelihood in the area, and that makes this study necessary.

### **3.2 Research Design**

The study is mainly qualitative research. According to Glossary of Marketing (2011), as cited in Lichtman (2017), qualitative research refers to a research which is based on finding the opinions and attitudes of the study participants rather than any significantly measurable data. A qualitative inquiry helps in the study to understand from the perspectives of the cocoa farmers with regards to how the illegal mining activities affect cocoa farming, the environment, education, employment and other socioeconomic factors in the rural mining communities. However, the study also collates some quantitative responses to determine the similar benefits and challenges that illegal small-scale mining presents to the various research participants and relate the results to similar studies in other mining communities. As a result, the research can be considered as a mixed

method because it entails both qualitative and quantitative data. The study made use of both primary and secondary data.

### **3.2.1 Primary Data**

As an exploratory and descriptive study, the findings depended mainly on the primary data. The primary data source is an original source in which the data is collected firsthand by the researcher for a specific research purpose (Persaud, 2012). The primary data for the study was sourced from the interviews and the questionnaire administered to the research participants. The data source was suitable for collecting data on individual experiences of living in the illegal mining communities.

### **3.2.2 Secondary Data**

The secondary data refers to the use of pre-existing data for a particular topic (Hanson, 2012). This study also dwelled on reports, newspapers and other media that provide commentary on illegal small-scale mining in Ghana. It also depended on the findings of the existing scholarly work done on illegal small-scale mining. This helped to get an overview of illegal small-scale mining and the related studies on the topic. Apart from providing a framework for illegal small-scale mining which facilitated the design of questionnaires, the literature review also made it possible to compare the results from this study to similar studies in other mining communities such as Atiwa District.

## **3.3 Description of Sample**

The study was conducted in five communities in the district listed by Ghana Statistical Service (2014) as the significant illegal mining areas in Amenfi West District. They included; Sraha, Ayiem, Amoamang, Breman and Oda Kotoamso. For the purpose of this study, these mining communities formed the rural mining communities in Amenfi West District of Ghana.

Therefore, the sample of the research was drawn largely from the population of Amenfi West District. Cocoa farmers were chosen as the major study participants for two reasons. Firstly, cocoa alone constitutes about 80% of farmer income in the district (Ministry of Food and Agriculture, n.d). Therefore, studying how illegal small-scale mining impacts cocoa farming can explain how rural livelihoods are affected. Moreover, cocoa farmers are the central focus because it is suspected that they relinquish their farmlands for illegal gold mining (Ghana Cocoa Board, 2017). Specifically, it is alleged that cocoa farmers in the mining communities in Ghana are presently interested in cutting down their cocoa for mining because they get higher pay from the miners than farming cocoa.

### **3.3.1 Sample Size**

In a qualitative framework, a small number of cases such as 10-20 is needed for the study. In that way, the small number gives the researcher the opportunity to explore social life beyond appearance to address the research problem in depth (Crouch & McKenzie, 2006). In the case of exploratory research, a sample size of 20 to 150 is deemed as a representative sample when the researcher uses a nonprobability sampling design (Daniel, 2012). A sample of 70 cocoa farmers was considered to collect enough information for the study. This comprised of the number of participants in each of the five communities as detailed below.

Table 1

*Sample size and response rate*

Community	Data collection Instrument	Sample Size	Number of Respondents	Response Rate
Breman	Questionnaires	10	10	100%
	Interview	4	3	75%
Amoamang	Questionnaires	10	10	100%
	Interview	4	2	50%
Oda Kotoamso	Questionnaires	10	10	100%
	Interview	4	2	50%
Ayiem	Questionnaires	10	8	80%
	Interview	4	2	50%
Sraha	Questionnaires	10	9	90%
	Interview	4	1	25%
Total	Interview and questionnaires	70	57	81%

Source: Field Data, 2017

Due to the illegality and sensitive nature of *galamsey*, the availability and willingness of the respondents to participate in the study was a problem. As a result, 57 people responded representing 81% response rate.

### 3.3.2 Sampling Technique

The study used nonprobability sampling design. Purposive sampling and snowball sampling techniques were used to sample the participants for the study. In the same way, Onumah, Leeuwis, Boamah, and Salifu (2013) used purposive sampling to recruit research participants in examining how *galamsey* impacts cocoa farming in Atiwa District of Ghana. At its core, purposive sampling allows the researcher to sample participants who are likely to provide data that are

detailed and relevant to the research question (Oliver, 2011). Cocoa farmers were selected for the study based on the farm, that is, each study participant was selected from a different cocoa farm or farming household as individuals in the same household would likely have similar responses. The snowball technique was also applied where the researcher was referred to the relevant participating respondents. The sensitive nature of the topic which required responses on illegal mining necessitated snowball sampling technique which is appropriate for a study group who may feel lacking in confidence to participate in a research project (Jupp, 2011). Despite the snowball sampling as discussed above, 13 potential participants failed to participate in the study.

### **3.4. Data Collection**

#### **3.4.1 Data Collection Instrument**

Clearly, structured interviews were used to expose each participant to the same question so that any difference in responses could be correctly interpreted as reflecting individual differences and not the process that produced the answer (Fowler & Mangione, 1990). That is, structured interviews involve administering standardized questions to all the research participants (Firmin, 2012). The interviews were conducted first to get a deeper understanding of *galamsey* but most of the participants were unwilling to permit the researcher to record the interview proceedings. As a result, the researcher focused more on questionnaires which did not demand recording the participants' voices. It was also easy to deal with larger samples using questionnaires as a larger sample is needed to make meaningful comparisons and conclusions. The questionnaires included both open-ended questions and closed-ended questions to obtain both quantitative and qualitative data as the combination of both helps to generate useful data for social research (Roulston, 2012). Open-ended questions were used in the study to solicit responses where the researcher thought



detailed responses could add depth knowledge. Likewise, open-ended questions are mostly efficient where the research have little prior knowledge of the possible responses (Payne, 2011).

### **3.4.2 Data Collection Procedure**

During the study, data were collected within five weeks (18<sup>th</sup> December 2017 to 14<sup>th</sup> January 2018). The field work started in Breman due to the availability of the research assistants and contact persons who gave directions to recruit the research participants. The second community visited was Oda followed by Amoamang, Sraha and Ayiem. The order was considered based on proximity of the communities to one another. Questionnaires and interviews were conducted at the farms and houses depending on the availability of the respondent. The interviews were conducted first to get deeper understanding of *galamsey*. The participants were engaged in a brief conversation about the research, their consent and the decision to withdraw or partake in the research. Due to the low literacy level of the respondents, an interview-based approach was adopted to administer the questionnaire. This is where the researcher reads and explains the contents of the questionnaires to the respondents and record their responses. As pointed out by Meadows (2013), interview-based questionnaires are appropriate when the educational level of the target population is insufficient to understand and answer questions themselves. Although the presence of the researcher can be distracting to the respondents but this mode of administering the questionnaires gives the researcher the chance to guide the respondents and redirect them back to the topic of relevance if they stray off it (Bowling, 2005).

### **3.5 Data Analysis and Interpretation of Results**

The study employed content analysis, graphical analysis and pairwise comparison techniques to analyze the data gathered. Content analysis is an analytic method employed to reduce data and make sense or out of which meaning is derived. It is commonly used in analyzing

interview transcript and responses to open-ended questionnaire items (Julien, 2012). In this study, the qualitative responses from the open-ended questions and the interview script were categorized into conceptual categories to identify the consistent patterns and the relationship between the themes. The results were then summarized using graphs and charts. Pairwise rankings are often used to prioritize lists of problems or projects to determine the most important things that need attention or what should be handled first (Russell, 1997). The pairwise ranking technique helped to determine the most important factors that influence illegal small-scale mining as well as the common impacts on cocoa farming and rural livelihood.

### **3.6 Research Limitations**

- This research faced cost and time constraints. The research was expected to be completed within few months which made it difficult to collect larger sample. In effect, not including more mining communities in Western Region makes it less reliable to generalize results from the study to the whole region. However, the results were representative for the five communities where the sample size was taken. Also, the communities were geographically widely dispersed which demanded more resources in moving to the targeted communities.
- The study did not include measures of revenue to gauge the marginal effects of illegal small-scale mining on the income of the respondents. Nevertheless, the impact on illegal small-scale mining was determined based on the participants' responses and their perceptions.
- The landowners responded that they have never sold their lands for *galamsey* but some abandoned mining pits were seen around. This implies that some of the respondents may have withheld information about their personal experiences with *galamsey* which is usually

the case when participants are being asked to answer questions about an illegal issue or a criminal act (Bleek, 1987).

### **3.7 Ethical Considerations**

- The study ensured voluntary participation. Participation was purely voluntary as the participants had the free will to decide whether to participate in the research activities.
- There was complete anonymity of the respondents so those outside the survey organization could not identify the survey participants (Kennedy, 2011). As a result, pseudonyms were used where a response was quoted in the final write-up of the findings to maintain anonymity.
- The questionnaires and the interviews questions were asked in English, but due to the low level of English literacy among the cocoa farmers, data was recorded in a Ghanaian local language, Twi and transcribed into English.

## **CHAPTER FOUR: RESULTS**

### **4.0 Introduction**

This section of the study focuses on presenting results collected from Amenfi West District of Ghana. The data for the research was gathered from fifty-seven respondents using questionnaires and semi-structured interview questions. The respondents were cocoa farmers in the rural mining communities. The chapter first outlines the demographic characteristics of the research participants, followed by answers to the three main research questions and ends with a discussion and summary of results.

### **4.1 Demographic Characteristics of Respondents**

A total of 57 respondents participated in the study out of which 70% were males. Concerning age distribution, the most extensive category of responses fell within 36-50 years which represented 42% of the total responses. Twenty-one respondents representing 37% of the total responses were below 35 years, and 21% were above 50 years. A majority (55%) of the respondents have no formal education, and those with the highest level of schooling represented 4% of the total participants who ended their education at high school level.

The research participants showed the ownership statuses of their cocoa farms as one of the following; farm owner, tenant farmer, family land, and other forms of leasehold ownership. Below are the responses from the various ownership statuses.

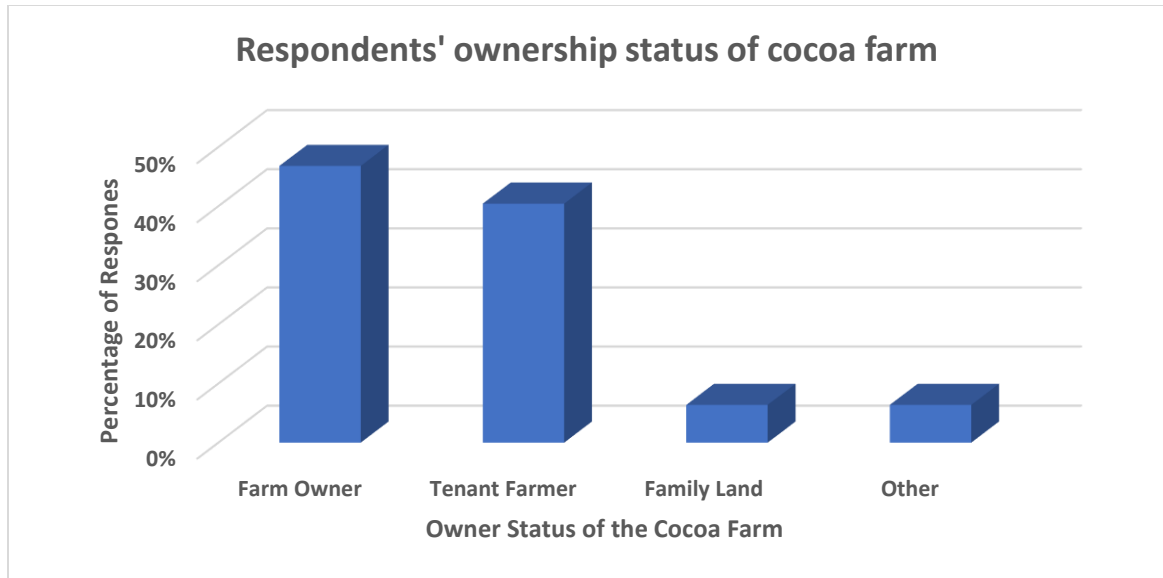


Figure 2. Respondents' Ownership status of cocoa farm. Author's Field note, 2017

From the above, 47% were farm owners who either work directly on the farm with support from farm laborers or have let out their farms to tenants. 40% of the responses came from tenant farmers. The remaining responses (13%) came from those working on either family lands or others such as leased farms where one acquires a temporary right to own a particular cocoa farm for a specified number of years.

Hence the majority of respondents between 36-50, have no formal education and own their own farms. Irrespective of the ownership status, almost all the participants (94%), depend on cocoa farming as their principal source of living. About 81% of the participants from each cocoa farming household are the breadwinners of their families with an average of 9 dependents. It means that a positive or negative impact of *galamsey* on each family or a cocoa farm is likely to have a corresponding effect on the lives of about nine people.

## **4. 2 Responses to the research questions**

### **4.2.1. Research Question 1: How does illegal small-scale mining interplay with cocoa farming as the primary economic activity for people in the mining area?**

In response to how *galamsey* impacts or interacts with cocoa farming in the mining communities in Amenfi West District, the participants spoke of labor, land, and other benefits as well as challenges that they face in their farming activities due to the presence of *galamsey*. The responses are discussed as follows;

#### **4.2.1.1 The Impact of *Galamsey* on the Availability of Cocoa Lands**

The respondents were asked to indicate whether *galamsey* has posed any problem to the availability of land for their cocoa farming. Out of the total responses, 26% said they had encountered a challenge on their farmlands due to *galamsey*. Some of the difficulties mentioned include unprecedented floods in cocoa farms due to *galamsey* activities. The uncovered mining pits collect water especially when it rains and flood the cocoa farms close to the mining sites. The floods in the farms prevent the farmers from carrying any farming activity in the flooded parts of the farms. Figure three below shows one of the mining sites close to a cocoa farm which usually causes flooding in the nearby farm when it rains.



Figure 3. A Galamsey operational site, close to a cocoa farm at Oda Kotoamso. Photo: Author, 2017.

Another way in which *galamsey* interferes with lands or cocoa farmers is the construction of paths or roads through the cocoa farms. The *galamsey* operators usually construct roads through some of the cocoa farms to convey bulldozers and other mining equipment to the designated mining sites. Majority of the responses showed that the miners typically ask consent from the relevant owners of the farms before the cocoa trees are plowed for the road. Also, the farmers get compensated whenever the *galamsey* operators create a path through their farms. However, 13% of the respondents who have encountered such situation in their farms said they were never compensated. 17% said they were compensated, but less than their expectations. The rest (70%) did not disclose the compensation given to them by the *galamsey* operators who have constructed roads through their farms. Disappointing to tenant farmers is that any form of payment that comes from the miners goes to the landlords. The tenant farmers further expressed

their worry that the landowners do not share the money received with them even when the non-performing part of their farms are sold out to the *galamsey* operators. Contrary to the responses from the tenant farmers, none of the landlords indicated that they have ever sold portions of their farms for *galamsey*. However, we can speculate that landlord farmers would not tell the truth even if they have sold their farmlands for *galamsey* because research participants sometimes lie to preserve their image when the topic becomes intimate and embarrassing or illegal (Bleek (1987) just like *galamsey* which is a criminal act.

Remarkably, the felling of cocoa trees to create roads to the mining sites has another advantage apart from the compensation to the affected farmers. It was interesting to find that *galamsey* operations in the rural mining communities have a positive side of improving access to farms and transportation. The paths created by the miners as shown in figure four below become accessible roads to ease movement of inputs to the farms and the transport of cocoa beans and other farm products.



Figure 4: A road constructed by *galamsey* operators at Kwabeng. Photo: Author, 2017.



One respondent expressed his view about the positive impact of *galamsey* operations in the community and said, “*Galamsey also makes transportation easy. The roads created by galamsey operators help to transport cocoa easily. Nowadays, motorcycles can move through our farms unlike first, where we had to carry loads on our heads*”.

#### **4.2.1.2 The Impact of *Galamsey* on the Availability of Labor**

Respondents explained how *galamsey* has negatively influenced labor available for cocoa farming which is similar to conclusions in the literature (Aneani, Adu-Acheampong, & Sakyi-Dawson, 2017; Onumah, Leewis, Boamah, & Salifu, 2013). In Amenfi West district, 55% of the research participants said the presence of *galamsey* operations had constrained their access to labor for their farming activities. According to the farmers, the miners pay a relatively higher wage per day than the cocoa farmers. In effect, farmers are compelled to offer competitive wages to retain their workers. Apart from dealing with higher payments, farmers also struggle to source labor. That is, the perception of high and instant pay from *galamsey* encourages much of the available labor in the rural mining communities to move into *galamsey*.

However, the presence of *galamsey* operators in the mining communities does not affect the availability of labor to some farmers. One of the respondents expressed his stand as, “*Oh, as for labor, I have my workers. I have never had difficulty searching for labor. My farm is good, and everyone would want to work with me* (Respondent ID 48, 2017). That is, in the view of some landowners, labor is always available to work as tenant farmers when you keep your cocoa farm in good condition.

#### **4.2.1.3 Impact of *Galamsey* on Cocoa Productivity**

The research revealed that *galamsey* has a direct effect on the health and yield of cocoa. This confirms findings obtained by Boateng, Codjoe and Ofori (2016), The farmers use water from

their surroundings to mix the insecticides and other chemicals to spray their farms. Unfortunately, the respondents trust that those water bodies have already been polluted with dangerous chemicals from the mining sites which tends to have a harmful effect on their cocoa farms. In the words of one respondent, "*Nearby farms at the mining sites do not yield better. Some of the cocoa trees are dying because we use the polluted water to spray the farms*". In giving more detail, the farmers also spoke about black pod diseases which they usually observe after their farms have been flooded with water from the mining sites. The black pod disease results in a lower output of cocoa as a significant part of the cocoa pods rot prematurely. It was added that some of the cocoa trees die when the flooding remains in the farms for a more extended period, something that is also attributed to *galamsey* practiced in the area..

#### **4.2.2 Research Question 2: What is the effect of illegal small-scale gold mining on livelihoods in the mining communities?**

In response to the effect of *galamsey* on livelihoods of Amenfi West District, the participants spoke of the positive side as well as the negative side. To assess the individual views about *galamsey*, they were asked to rank the impacts based on what matters to them when it comes to discussions on *galamsey*. Using pairwise ranking, the effect of *galamsey* on Amenfi West District were ranked by the respondent as in the table below. Employment, pollution, social vices, capital for investment and cost of living are represented by 1, 2, 3, 4, and 5 respectively. Table 2 below shows the pairwise comparison of the effect of *galamsey* accounting to the respondents' perceptions.

Table 2.

*Pairwise ranking of the effect of galamsey*

Pairwise Ranking of the effect of <i>galamsey</i> (n =57)						
	1	2	3	4	5	Ranking
1	X	2	1	1	1	2nd
2		X	2	2	2	1st
3			X	3	3	3rd
4				X	5	5th
5					X	4th

Note: 1 = Employment, 2 = Pollution, 3 = social vices, 4 = capital for investment, 5 = cost of living represented

The table above shows that members of the community show the most significant concern to pollution (2) when it comes to *galamsey* as it was ranked first by the respondents. Some of the respondents also acknowledged the merits of *galamsey* as a source of employment opportunity (1) which was given a higher priority and ranked as the second concern after pollution. Capital for investment (4) was given the least priority by appearing last in the ranking because most people indicated that *galamsey* does not have any direct benefits to them.

#### **4.2.2.1 Employment and Alternative Source of Livelihood**

Participants were asked to show whether they agree to the allegations that *galamsey* provides employment and 62% of them attested that *galamsey* creates jobs in their communities. Some of the respondents acknowledged the fact that *galamsey* offers more attractive daily wage than any other employment opportunity in the rural mining communities. The higher pay attracts youth from different places to the mining villages to seek employment with the miners.

Apart from those who travel to the *galamsey* communities purposely to work with the miners, some of the cocoa farmers, especially the young tenant farmers also consider *galamsey* as an alternative source of livelihood. This could be the reason why few farmers are below 35 years. 26% of the respondents indicated that *galamsey* has helped to improve lives in the mining communities. As disclosed by the cocoa farmers, the yield and revenue stream from their farms are usually very low during the lean season making it difficult for them to sustain their families. In a search for other means to survive, they resort to a "by-day" work at the mining sites where they work and get paid daily. Holding other factors constant, the farmers can improve their wellbeing by resorting to *galamsey* in periods when they do not have other means to generate income to take care of their families. Similarly, secondhand information from the respondents suggests that some of the landowners also diversify by selling parts of their idle and bare lands to the *galamsey* operators. Nevertheless, most of the respondents acknowledged that this form of survival strategy is not sustainable and may have some long-term consequences on those who sell out their lands for *galamsey*.

#### **4.2.2.2 The impact of *Galamsey* on the Environment**

All the participants, irrespective of their stands about *galamsey*, spoke about pollution as the primary concern as already indicated. According to the respondents, the streams and other watercourses which were sources of water for domestic use have been muddied by the *galamsey* operators. The mine wastes from the mining sites flow into the water bodies and make them look brownish. As a result, the surrounding water bodies cannot be used for their intended purposes by the people. A depiction of the effect of *galamsey* on the watercourses is shown in Figure five below.



Figure 5. Effect of *galamsey* on watercourse at Amoamang. Photo: Author, 2017

Moreover, some of the streams have been caused to extinction as the miners sometimes block the flow of the streams to carry out their mining activities. In effect, the residents in the mining communities struggle to access water for domestic use. Unfortunately, the majority (68%) of the respondents said they do not know any medium to report such nuisance by the *galamsey* operators.

Also, the *galamsey* operators usually drill trenches during the mining process. The pits are left open, which collects liquid mine waste and refills up with water when it rains. (See in figure six below). The stagnant water in the pits then breeds mosquitos and other harmful insects. Apart from increased cases of malaria, the participants also experience body itching which is suspected to result from bites from insects carrying diseases.



*Figure 6.* Uncovered mining pit filled with water at Breman. Photo: Author, 2017

There were complains about the permanent loss of farmlands in some areas where the *galamsey* operators remove the topsoil. Some of the abandoned mining lands as shown in Figure seven below, remain desolate with gravels and stagnant waters which makes it impossible for agricultural use. At times the deep pits left after the mining operations makes some parts inaccessible and dangerous to the farmers and their domestic animals.



*Figure 7.* Land remains desolate after *galamsey* at Oda Kotoamso. Photo; Author, 2017

#### 4.2.2.3 Responses on other Impacts of *Galamsey*

Apart from pollution and employment which came up as the major issues, participants were also asked to indicate their views on the impacts of *galamsey* on other socio-economic activities such as social vices, cost of living and capital for additional investment. Despite the allegations that people earn higher incomes from *galamsey*, 68% of the participants disagreed that *galamsey* provides people with money for other investments. A participant spoke about some people in the community who are currently struggling to take care of their families because they had sold their farms to *galamsey* operators a year ago but did not invest the proceeds to maintain their source of income. In essence, *galamsey* hurt the livelihoods of those people in the long-run. Cost of living and social vices were identified in the literature as some of the challenges faced by the rural mining communities, but these issues were not reported among many respondents in Amenfi West District.

#### 4.2.3 Research Question 3: Why would a cocoa farmer choose to do small-scale mining over farming cocoa?

Several reasons were given to justify why most cocoa farmers would choose to continue with their usual farming instead of entering into *galamsey*, and a large majority or 93% of the respondents trusted that cocoa farmers would not decide to do *galamsey*. It was explained that agriculture is more sustainable than *galamsey* and therefore people would not be able to cater for their families in the long-run when they sell their farmlands for *galamsey*. Moreover, people believe that farms are family properties inherited from the ancestors to be passed on to the future generation and therefore must not be degraded. It was also noticed that people would not opt for *galamsey* if they had healthy and good yielding farms.

On the other hand, the participants were asked to indicate their views on some of the reasons that would motivate farmers to choose *galamsey* over cocoa farming. Three reasons that

came up as the significant enticement for *galamsey* include, higher pay from *galamsey*, poor cocoa yield, and low pricing of cocoa.

Using pairwise ranking, the attractive pay from *galamsey* was listed first as the primary reason that induces people to abandon farming to do *galamsey*. The nature of farmlands and cocoa yield was also identified as a factor that could encourage or discourage *galamsey*. As a result, poor cocoa yield was ranked second with regards to the reasons that can compel people to sell portions of their farmlands for *galamsey*. The poor cocoa yield comes as a result of old and dying cocoa trees and insufficient farm inputs to maintain the farms. Also, it is believed that the price of cocoa is too low which makes cocoa farming unattractive. Therefore, the perception that cocoa farmers are not being compensated well for holding to their farming activities was also identified as a reason for *galamsey* according to the respondents.

In addition to understanding the factors that encourage *galamsey*, the participants were asked about the perceived ways through which the illegal miners obtain the land for mining operations. Below were the responses.

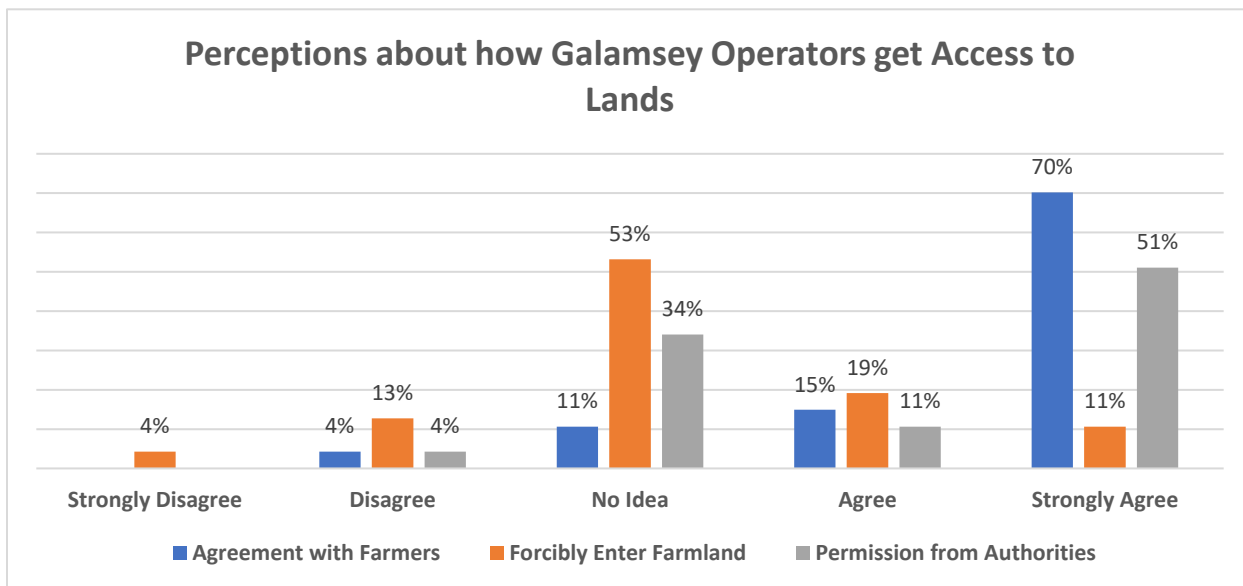


Figure 8. Perceptions about how *galamsey* operators get access to the lands



From the chart above, 70% of the respondents strongly agree that the illegal miners usually consent with the farmers or landowners to obtain the lands for mining. Also, 51% strongly agree that the miners always seek for permission from authorities to gain the space for mining. However, 11% perceive that the *galamsey* operators do barge into people's lands for mining without a permit from anyone. The above responses suggest that the miners usually contact at least, a member of the community such as the individual landowners or authorities to obtain the lands. This implies that any measure to handle the illegal mining must start with the members of the community as they have a more significant influence on land use. However, the answers also point out that there is some support for the idea that *galamsey* operators sometimes forcibly enter farmlands. This is indicated by 11% of the respondents who strongly agree that the miners sometimes rush into peoples' land without authority or concern from any authority in the community.

#### **4.3 Summary and Discussion of Results**

Unlike the general perceptions that cocoa farmers are abandoning their farms for *galamsey*, the results show that there are different parties to cocoa farming who have different perceptions about *galamsey*. The tenant farmers neither have influence nor benefit from the sale of lands. They only resort to *galamsey* as an alternative source of living. Therefore, any effort to stop the sale of properties for *galamsey* should not be directed to tenant farmers. However, none of the landowners indicated that they have ever given out lands to the *galamsey* operators which is not a surprise due to the illegality and sensitive nature of the topic. As pointed out by Bleek (1987), research participants sometimes lie to preserve their image and other people's respect when the topic becomes intimate and embarrassing or illegal.

In like manner, the responses by the landowners that they have never sold their farms for *galamsey* were suspected to be less frequent. Therefore, it is possible that the landowners' answers

were not wholly truthful because *galamsey* is a criminal act which leads to the suspicion that the researcher was a criminal investigative officer who wanted to use probing questions as a ploy to know the truth about them and arrest them later. In other words, the truth was suspected to be found in the tenant farmers' responses that cocoa farmers sell their poor yielding farms to the illegal miners. This is because the tenant farmers had no reputation at stake as they do not have lands to sell (some of the respondents were comfortable to give answers because they knew the research assistants as they live together, and that provided them with trust and reassurance that the researcher was a student and not a police officer).

Apart from 'get-rich-quick' mentality (Ministry of Lands and Natural Resources, 2017; Hilson & Garforth, 2012), which is alleged as the inducement for *galamsey*, another major factor which encourages *galamsey* activities was identified. The perception that people sell their old or poorly yielding farms for *galamsey* was a significant finding in this study. The responses that *galamsey* brings rural development regarding roads has also not gained much attention in the literature.

The impact of *galamsey* on the environment, health and other socio-economic activities as enunciated in the literature was evidenced in the study as well. The contemporary debates about *galamsey* concerning its merits and demerits were repeated, but the negative sides dominate in Amenfi-West District according to the responses of the study participants. Therefore, it can be argued that *galamsey* has not improved the wellbeing of the people in the communities where it is operated because they face several challenges and health risks as a result of the massive pollution in the wake of *galamsey*. It can be concluded confidently that *galamsey* worsens the plight of cocoa farmers because it lowers cocoa output and after mining ceases the farmers' ability to continue to generate income sustainably from the abandoned mining lands.

## CHAPTER 5: CONCLUSION

### 5.0 Introduction

This thesis aimed to investigate into how illegal small-scale mining impacts on cocoa farming and the general living conditions in the rural mining communities. As a result, a study was undertaken in Amenfi West District of Ghana where both cocoa farming and illegal mining operations coexist. Cocoa farmers were engaged in the study to solicit their views on how *galamsey* affects their cocoa farming and other livelihood activities as well as the society. This chapter briefly summarizes the research analysis with policy recommendations as well as a recommendation for further research.

### 5.1 Conclusion

The literature revealed that most people across the world derive their livelihood from farming or along the agricultural value chain (World Bank, 2008). In the case of Amenfi West District of Ghana, majority of the people depend on cocoa farming for a living. It has been alleged that cocoa farmers in Amenfi West District are relinquishing their cocoa farms for *galamsey*. As a result, the researcher sought to examine the motivations for *galamsey* and how its interplays with cocoa farming and the impacts on the wellbeing of the people. The study revealed both positive and negative impacts of *galamsey* on cocoa farming and the livelihoods of people in the mining communities. However, the adverse effects exceeded the benefits as illustrated in figure nine below.

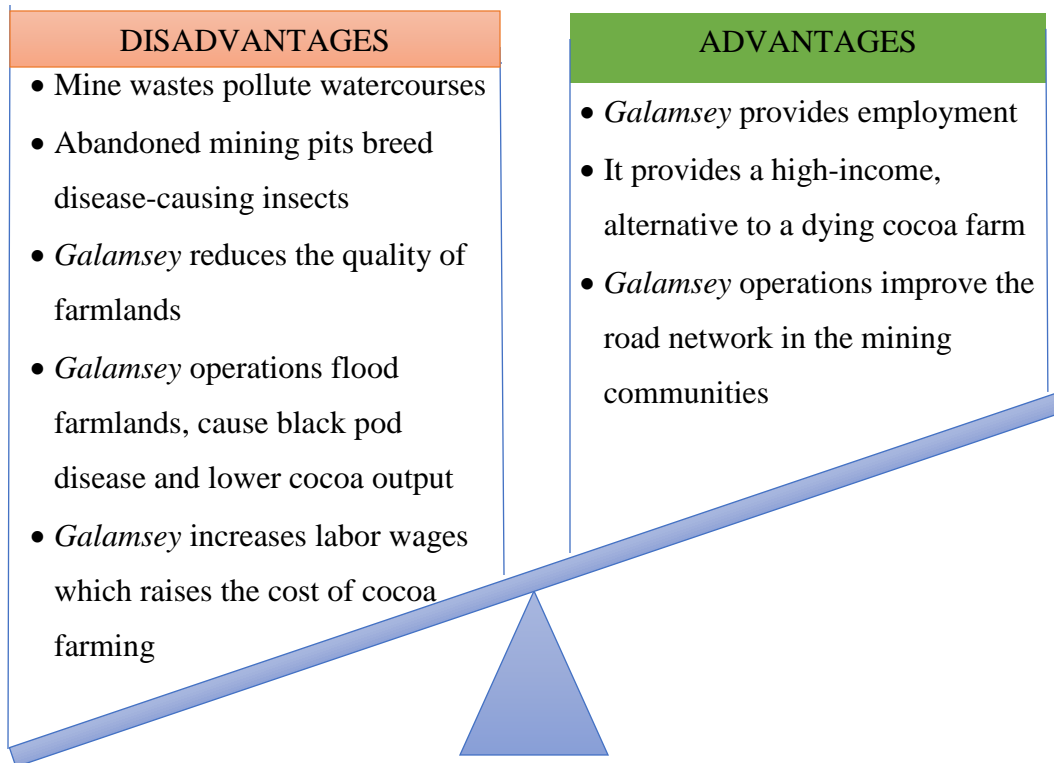


Figure 9. A Summary of the impacts of *galamsey* on cocoa farming and livelihoods. Source: Authors' field data.

As a result of the different views about *galamsey*, the respondents were asked to indicate what matters to them (both advantages and disadvantages) when it comes to *galamsey*. Some of the areas that people spoke about included the impact of *galamsey* on employment, pollution, capital for investment, cost of living and social vices. As indicated in table three below, a pairwise ranking was used to collate the various responses to know the level of importance that people attached to the various impacts of *galamsey*. Majority of the people showed greatest concern to pollution which was ranked as the first primary worry when it comes to issues about *galamsey*. The residents in the mining communities face several challenges such as water pollution and health implications associated with bites from disease-causing insects bred from the abandoned mining pits and polluted watercourses.

Table 3.

*Pairwise ranking of the effect of galamsey*

Pairwise Ranking of the effect of <i>galamsey</i> (n=57)						
	1	2	3	4	5	Ranking
1	X	2	1	1	1	2nd
2		X	2	2	2	1st
3			X	3	3	3rd
4				X	5	5th
5					X	4th

Note: 1 = Employment, 2 = Pollution, 3 = social vices, 4 = capital for investment, 5 = cost of living

*Galamsey* operations also destroy the quality of farmlands and cause unusual floods in the cocoa farms close to the mining sites which results in black pod diseases, death of cocoa trees, and ultimately low cocoa output. Apart from its environmental effects on cocoa farming, *galamsey* also leads to labor shortage with a corresponding high labor wage which consequently compels cocoa farmers to offer a higher wage to attract and retain workers.

On the other hand, the *galamsey* operators employ local people and migrants in the district. As a result, employment was given a higher priority and ranked as the second concern after pollution as indicated in table four above. Some of the tenant cocoa farmers resort to *galamsey* as their alternative source of livelihood when cocoa is out of season. Nevertheless, capital for investment was ranked as the least priority because most people indicated that *galamsey* does not have any direct benefits to them.

Contrary to the allegations about farmers relinquishing cocoa farms for *galamsey*, the owners of cocoa farms indicated that they had never sold out their farmlands for *galamsey*. However, it is possible that the landowners' answers were not wholly truthful because *galamsey* is

a criminal act which led to the suspicion that the researcher was a criminal investigative officer who wanted to use probing questions as a ploy to know the truth about them and arrest them later. To increase response rate and reduce the possibility of lying informants, the research assistants were recruited from the communities whose familiarity provided trust and reassured the respondents that the researcher was a student and not a police officer. Nevertheless, most of the tenant farmers did not hesitate to give details about *galamsey* because they knew their reputations were not at stake as they do not own farmlands let alone of selling.

Apart from the secondhand information that landlord farmers sell their farms for *galamsey*, it was also found that landowners sometimes sell portions of their lands to *galamsey* operators, not for mining but to construct roads to their mining sites. Remarkably, the cutting of cocoa trees to create roads to the mining sites has another advantage apart from the monetary compensation to the landowners. It was interesting to find that *galamsey* operations in the rural mining communities have a positive side of improving access to farms and transportation. The paths created by the miners become accessible roads to ease movement of inputs to the farms and the transport of cocoa beans and other farm products. The findings that *galamsey* brings rural development regarding roads has not gained much attention in the literature.

Concerning why people would not go into *galamsey*, it was found that most people see farms as not belonging to themselves, but to "future children" or family and therefore must not be sold out for *galamsey*. The risk of *galamsey* was found to be low among healthy and good yielding farms as well. Nevertheless, it was also revealed that several circumstances compel other cocoa farmers to enter into *galamsey*. Besides the attractive pay which is commonly known as the primary reason that encourages *galamsey*, the results from the study further revealed that people might have other reasons to abandon cocoa farming for *galamsey*. For instance, some cocoa

farmers with old and weak yielding farms were indicated to be more predisposed to relinquish their farms for *galamsey* as they could only generate incomes from the dying farms. The perception that people sell their old or poorly yielding farms for *galamsey* was an important finding in this study as well. Another condition which makes people choose *galamsey* is the perception that cocoa farming is less beneficial as the price of cocoa is too low for them to cover the operating expenses and still make superior profit relative to *galamsey*. Nevertheless, most of the respondents acknowledged that engaging in *galamsey* as a survival strategy is not sustainable and may have some long-term consequences on those who sell out their lands for *galamsey*.

To sum up, short term-benefits to individuals who have control of lands is the major reason that encourages *galamsey* operations. Unlike the benefits which accrue to those who involve directly in it, the overall community bears the adverse effects of *galamsey* activities. Ultimately, *galamsey* worsens the plight of the affected people in the mining communities and robs them of sustainable livelihoods.

## 5.2 Policy Recommendations

This section recommends some approaches that can be adopted to control or mitigate the adverse effects of *galamsey* to ensure sustainable mining in Ghana.

First, more of a negotiation process with stakeholders is needed instead of just military intervention. In 2017, the Government of Ghana deployed a security task force to the mining communities to use power to curb illegal mining activities. The task force has been lauded for several arrests of unlawful miners and confiscations of illicit mining equipment. However, the research in Amenfi West District reveals that illegal mining activities are still very much prevalent in the hinterlands. Some of the illegal miners are still in operation and have developed strategies to avoid being arrested. A negotiation process could bring a balance between the small-scale

mining sector and other sustainable rural livelihood activities. This could, for instance, be achieved by making the registration process of small-scale mining comfortable and attractive. With mining license and proper regulations, the miners would be required to take their time and refill the trenches (presently, the illegal miners rush through the mining process and leave the pits uncovered due to the fear of being caught). Apart from avoiding grounds for harmful insects, negotiating with the miners to refill the mining pits would also provide an opportunity for the lands to fallow and regain nutrients for agricultural use. The security task force could help by insisting that the miners restore the lands after mining.

Secondly, instead of focusing on restricting farmers from selling their lands, Ghana Cocoa Board in cooperation with the government of Ghana could provide incentives to make cocoa farming more attractive. One of the reasons why people sell out their farmlands for *galamsey* is the difficulties in reviving their old and dying cocoa farms. Farmers with old and dying farms could be provided with the support and technical assistance needed to replant cocoa and maintain healthy farms. Since the benefits from cocoa take a relatively extended period to come, especially as compared to *galamsey*, farmers who are in the process of planting cocoa should be provided with financial aid to support alternative livelihoods until maturity of the farms. The financial support could be long-term loans whereby payments would be made when the farmers start to harvest cocoa. The initiatives would give farmers the reason to continue with farming instead of giving out their farmlands to the *galamsey* operators for the reason that they are not reaping good returns from the farms.

Finally, intensive public education is needed to inform cocoa farmers and other stakeholders about the proper channels to report unauthorized mining activities. It was noticed that most (68%) of the respondents did not know how or where to report unpermitted mining activities



if they so wished. This would put people in a good position to report illegal mining issues without any fear of victimization.

### **5.3 Recommendation for Further Studies**

The suggestions below would help to improve the understanding of the impact of *galamsey* on the living conditions of people in the mining areas and the strategies that would help to mitigate the adverse effects.

- Further research could be conducted to examine the kind of insects produced from the mining pits and the health implication of these insects on people in the rural mining communities.
- More work can be done to determine alternative sources of livelihoods in the rural mining communities. An available alternative livelihood for cocoa farmers especially when cocoa is out of season would help to reduce the incidence of cocoa farmers wanting to do *galamsey*.
- Also, research about mining strategies is needed to determine a sustainable mining layout for the small-scale miners to preserve the environment.

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## APPENDIX

INTERVIEW QUESTIONS FOR COCOA FARMERS IN THE RURAL MINING  
COMMUNITIES IN AMENFI-WEST DISTRICT

This interview is intended for academic purpose only. The study seeks to understand the impacts of *galamsey* on cocoa farming and other livelihood activities in the Amenfi West District in the Western Region of Ghana. Your participation is entirely voluntary, and you can decide not to complete the interview at any point in time. I will be asking for your opinions, thought and experiences. You can ask me questions, skip any question or completely withdraw from the study at any point in time. Your responses will be anonymous and will never be linked to your identity. Thank you for your input.

1. What do you know about *galamsey*?
2. What are the challenges that cocoa farmers in this community face due to *galamsey* activities (labor, land etc.)?
3. How does *galamsey* activities help cocoa farming?
4. How do you think *galamsey* affect living in this community (individuals, community (positive, negatives)?)
5. Why would a cocoa farmer consider the decision to move into *galamsey*?
6. What do you think can be done to bring a balance between small-scale mining and cocoa farming?
7. Is there anything else a researcher interested in *galamsey* needs to know?

## STRUCTURED QUESTIONNAIRES FOR COCOA FARMERS IN THE RURAL MINING COMMUNITIES IN AMENFI-WEST DISTRICT

This interview is intended for research purpose only. The study seeks to understand the impacts of *galamsey* on cocoa farming and other livelihood activities in the Amenfi West District in the Western Region of Ghana. Your participation is entirely voluntary, and you can decide not to complete the interview at any point in time. I will be asking for your opinions, thoughts, and experiences. You can ask me questions, skip any question or completely withdraw from the study at any point in time. Your responses will be anonymous and will never be linked to your identity. Thank you for your input.

### Background Information

1. Gender:
  - a. Female [ ]
  - b. male [ ]
  - c. Other [ ]
2. Which category below includes your age?
  - a. below 18 [ ]
  - b. 18-25 years [ ]
  - c. 26-35 years [ ]
  - d. 36- 50year [ ]
  - e. above 50 years [ ]
3. What is your level of formal education?
  - a. No formal education [ ]
  - b. Primary [ ]
  - c. JHS [ ]
  - d. SHS [ ]
  - e. Tertiary [ ]
4. What is your ownership status of the cocoa farm?
  - a. Farm owner [ ]
  - b. Tenant farmer [ ]
  - c. Family land [ ]

d. Other.....

5. Is cocoa farming your main source of income?

a. Yes [ ]                      b. No [ ]

6. If no, state your main source of income

.....  
.....

7. Are you the breadwinner of your family?

a. Yes [ ]                      b. No [ ]

8. If yes, how many people do you cater for?

.....

**Farmers awareness of illegal small-scale gold mining (*galamsey*) and its impacts on cocoa farming**

9. What do you know about *galamsey*?

.....  
.....  
.....

10. Do you think *galamsey* activities have increased in this community in the past 5 years?

a. Yes [ ]                      b. No [ ]

11. Do you think people in authority influence *galamsey*?

a. Yes [ ]                      b. No [ ]

12. If yes, list the authorities and state how they influence *galamsey* activities.

.....

.....

.....

13. Rank the following from the least (1) to the most common (5) possible ways through which the *galamsey* operators get access to the farmlands for mining?

	5	4	3	2	1
Possible ways through which <i>galamsey</i> operators get access to lands for mining	Strongly Agree	Agree	I have no idea	Disagree	Strongly agree
A. Agreement with the farmers					
B. Forcibly enter the farmlands without the consent from the land owners					
C. Permission from authorities in the community					

14. Has *galamsey* posed any problem to the availability of land for your cocoa farming?

- a. Yes [ ]                      b. No [ ]

15. If yes, Explain

.....

.....

.....

16. Have you ever lost a portion of your farmland due to *galamsey*?

- a. Yes [ ]
- b. No [ ]

**If no skip to question 18.**

17. If yes, how did the *galamsey* operators get access to your farmland?

- a. Agreement with me [ ]
- b. Agreement with authority in the community without my consent [ ]
- c. The *galamsey* operators started without my consent or permission from anyone in this community [ ]
- d. Other.....  
.....

18. How was the compensation

- a. There was no compensation [ ]
- b. I was compensated but less than my expectation [ ]
- c. I was fairly compensated [ ]
- d. The compensation far exceeded my expectation [ ]

19. Has *galamsey* posed any problem to the availability of labor for cocoa farming?

- a. Yes [ ]
- b. No [ ]

20. If yes, explain

.....  
 .....  
 .....

21. Does *galamsey* provides you with capital to support your cocoa farming?

- a. Yes [ ]
- b. No [ ]

22. Do you think some cocoa farmers will prefer to sell portions of their lands for *galamsey*?
- a. Yes [ ]                      b. No [ ]

**If no skip to question 23.**

23. For each of the following pairs of components, select the component which you think is the most important motivation or reason why one will sell his/her cocoa farm for *galamsey*

<p>A. Please select the component which is most important motivation for <i>galamsey</i></p> <p><i>Galamsey</i> pays higher [ ]</p> <p>cocoa pays lower [ ]</p>
<p>B. Please select the component which is most important motivation for <i>galamsey</i></p> <p><i>Galamsey</i> pays higher [ ]</p> <p>Poor cocoa yield [ ]</p>
<p>C. Please select the component which is most important motivation for <i>galamsey</i></p> <p>Poor cocoa yield [ ]</p> <p>Cocoa pays lower [ ]</p>

24. Do you think some farmers prefer not to sell portions of their farmlands for *galamsey*?
- a. Yes [ ]                      b. No [ ]

25. If yes, what are some of the reasons why people would not want to sell portions of their lands for *galamsey*?

.....

.....



.....  
 .....

26. Assuming there is a mining activity on your land without your consent. Do you have any channel to report such issue?

b. Yes [ ]                      b. No [ ]

Explain.....  
 .....  
 .....

**Examining the Impacts of *galamsey* on the environment and other socio-economic activities**

27. Consider the following possible impact of *galamsey* on this community. Indicate whether you agree or not

Possible impact of <i>galamsey</i> in this community	Agree	Disagree
A. <i>Galamsey</i> provides capital for bigger investment	[ ]	[ ]
B. <i>Galamsey</i> provides employment	[ ]	[ ]
C. <i>Galamsey</i> has led to high cost of living (rising prices of food, rent, transportation, etc)	[ ]	[ ]
D. <i>Galamsey</i> has polluted the water bodies	[ ]	[ ]
E. <i>Galamsey</i> has deformed our lands with trenches	[ ]	[ ]
F. <i>Galamsey</i> provides ready market for food crops	[ ]	[ ]
G. <i>Galamsey</i> has increased school dropout	[ ]	[ ]
H. <i>Galamsey</i> has increased drug abuse	[ ]	[ ]
I. <i>Galamsey</i> has increased prostitution	[ ]	[ ]

28. Rank the following in order of importance from 1 to 5, where 1 is the most important to you and 5 is the least concern to you.

*Galamsey* provides employment [    ]

*Galamsey* pollute the environment [    ]

*Galamsey* encourages social vices [    ]

*Galamsey* provides capital to support other investments [    ]

*Galamsey* increases cost of living [    ]

29. Considering the positive and the negative impacts of *galamsey*, is the overall effect a gain to this community?

- a. Yes [    ]
- b. No [    ]

30. What do you think can be done to bring a balance between small-scale mining and other economic activities?

.....  
.....

31. Is there anything else a researcher interested in *galamsey* needs to know?.....

