

ASHESI UNIVERSITY COLLEGE

**ASSESSING THE IMPACTS OF GALAMSEY OPERATIONS ON THE
SOCIOECONOMIC ACTIVITIES OF GHANAIAN RURAL MINING
COMMUNITIES: A CASE STUDY OF AYANFURI**

BY

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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:.....

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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:.....

Date:.....

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ABSTRACT

Ghana is a destination for mining gold, one of the precious metals in the world. This has attracted both legal and illegal prospectors to Ghana from far and near. In an attempt to regulate mining activities, the government issues licenses to determine who mines what, where and how. The gold industry is divided into two: large-scale and small-scale mining. Small-scale mining is reserved for Ghanaian citizens only. This way, the Environmental Protection Agency (EPA) and the Minerals Commission monitors and keeps mining companies in check. However, some people operate without the approved licences from these authorities. Thus, their activities are deemed illegal, which is locally referred to as '*galamsey*'.

The aim of this research was therefore to investigate the socioeconomic impacts of galamsey operations on a typical rural mining community like Ayanfuri. Galamsey has been an issue for most Ghanaians and ending it or reducing its negative effects is one of the government's top priorities. This research employed mainly qualitative techniques like interviews and questionnaires to collect data. Content, descriptive and graphical analyses were then used to analyse the data.

Research findings suggest that galamsey is a reliable lucrative and crucial source of employment for the people of Ayanfuri. It also facilitates economic activities such as trading and the creation and expansion of businesses in the community. On the negative side, galamsey promotes child labour, inflation of prices, loss of farmlands, and depletion of the environment amongst other negative impacts. Recommendations from the research include, encouraging farming cooperatives in the community as an

alternative source of livelihood. Perseus Mining (Ghana) Limited, the resident mining company can also sustain this by purchasing all food crop requirements from the local farmers. Children in the community should go through mentorship programmes where they will learn to appreciate education and the value of staying in school. Children who cannot afford education should be awarded scholarships, which will keep them from engaging in galamsey. These recommendations should help control some of the negative socioeconomic impacts that galamsey presents.

Keywords: galamsey, illegal mining, socioeconomic, impact

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CHAPTER 1: INTRODUCTION

1.1 Background

Ghana was formerly called the Gold Coast before gaining independence on 6th March, 1957. The name "Gold Coast" suggested that the country was well endowed with substantial quantities of gold deposits and other minerals. Ghana's gold mining industry has been around for about 2,500 years and is dominant in the southern part of the country (Jackson, 1992). According to history, the Portuguese were the earliest Europeans to arrive on the shores to the Gold Coast in 1471. Led by Juan de Santarem and Pedro de Escobar, they made the discovery of alluvial gold along the coastal belt, between the Volta and the Ankobra rivers (Reisenberger, 2010). However, prior to the coming of the Europeans, the indigenous people mined gold in the traditional way and used it for ornaments as well as exchanging it for other goods (Reisenberger, 2010).

Today, the country is the second and tenth largest producer of gold in Africa and the world respectively (Revenue Watch Institute, 2011). However, mining in Ghana has not only been in the area of gold. Other minerals like bauxite, diamonds, limestone, manganese, rock salt, aluminium are mined in the country. Oil is the recent addition to the country's mineral portfolio upon its discovery in 2010.

In 2012, records showed that there were seven large-scale mining (*Level A*) companies in Ghana operating in different locations, mostly in the southern part of the country (Ghana Chamber of Mines, 2012). *See Table 1 in APPENDIX A*. Additionally, there were also more than one thousand registered small-scale mining companies in the industry (Ghana Chamber of Mines, 2012).

The mining industry contributes significantly to the development of Ghana's economy. The gold industry creates employment opportunities for Ghanaians, generates revenue for the government, and contributes to the Gross Domestic Product (Reisenberger, 2010). The mining companies are also obliged to pay royalties to the traditional stool lands in the communities in which they operate. Gold mining companies also pay royalties to the country. According to the Chief Executive Officer (CEO) of the Ghana Chamber of Mines, Dr Toni Aubynn, mining companies in Ghana paid an estimated amount of US\$140 million in royalties to the country between January and June 2012 (Business Guide Newspaper, 2012)

In 2011, the gold industry accounted for 6% of the country's GDP (Ghana Chamber of Mines, 2012). Also in 2012, gold accounted for 42% of the country's gross export revenue, making it the leading export earner and a major contributor to the country's balance of payment (Ghana Chamber of Mines, 2012).

In spite of the numerous benefits that come along with mining gold such as employment and revenue, there has been evidence of detrimental effects on societies where gold is mined. For example, gold mining activities negatively affect farming. Farming is a common means of livelihood for most people living in the rural areas where gold is often mined. Farmlands are destroyed right from excavations, the use of dangerous explosives for breaking the rock and poisonous chemicals for washing the gold such cyanide and mercury. Most often, affected farmers and youth by way of creating a source of livelihood tend to engage in "*galamsey*" activities in these vicinities (Reisenberger, 2010).

"*Galamsey*" is a term typically used to describe illegal mining activities in Ghana. The term was derived from the phrase "gather them and sell". The artisans of this craft generally collected fragments of gold after the extraction and sell them to local buyers of gold and other minerals. These local buyers then sell them to a registered gold buyer such as the Precious Minerals Marketing Company (PMMC). These buyers use the prevailing market prices on the international market as a benchmark to determine the purchase price. Most of these *galamsey* operations are done in rural mining areas in the country and have been going on for many years. However, in the last few decades, the scale of *galamsey* operations have increased to alarming proportions with foreigners especially Chinese taking very active part in this illegal activity.

In the early years of Ghana's history, even before the coming of the Europeans, the indigenous people mined gold. They did it with less sophisticated technology by the riverside in the forest regions. Most of the techniques used then are still being practiced in *galamsey* operations today.

A major reason for the increase in *galamsey* operations apart from a down turn in the general economic situation is the lands, which have been taken over by mining companies. These lands served as farmlands for the inhabitants of communities around mines. Due to the construction of the mines and their operations, farmlands, a major means of livelihoods are being destroyed (Reisenberger, 2010). The arable lands left for the people have also been taken over by *galamsey* operators causing serious effects on affected communities. Further, because *galamsey* generates significant revenue, *galamsey* operators who often have deep pockets often use the leverage that such high incomes give them to engage in antisocial

behaviour. They are often accused of several negative social practices such as soliciting the services of prostitutes and undermining marriages of the indigent by enticing their wives with money.

Additionally, due to its unstructured nature, galamsey operations often harbour criminals and this makes it very dangerous for the society. Children attracted by the prospect of quick easy cash are also caught up in the act because there seem to be no age restrictions for gaining employment for these operations, hence a dis-incentive to invest in costly education.

1.2 Problem Statement

Galamsey has been an issue of concern to most Ghanaians for many years now. As of the time of this research, there are also foreign nationals in engaged in galamsey. The Daily Graphic newspaper headline "*Mad rush for our gold*" on Tuesday, 18th June, 2013, is one such indication. The paper indicated that many foreign nationals from neighbouring countries to as far as China are in the country engaging in galamsey. They are often located in rural communities where they pay some lease money to some traditional heads and start work on any land they deem fit for their activities.

Galamsey operators mostly operate close to water bodies which serve as a source of water for their operations. Run-offs from their waste water often containing chemicals contaminate these water bodies. Today, major important rivers such as the Pra, Birim, and the Offin just to name a few are heavily polluted due to galamsey activities (Adjei, Oladejo, Adetunde, 2012).The galamsey operators also create pits that are not filled after use exposing themselves and others (including women and children)

to harmful chemicals. In worse cases, we hear that pits of these illegal mines cave in killing several people.

The same news article above talks about some deaths related to galamsey operations. On November 12, 2009, 21 galamsey workers including women died when the pit they worked in collapsed at Dompase in the Ashanti Region. Again, in June 28, 2010, about 112 miners died when a pit caved in the Small Adoboa Mining and Trading Enterprise at Akyempem-Breman in the Upper Denkyira East municipality. The paper also reported that on April 15, 2013, 16 dead bodies were retrieved from a pit collapsed in Kyekyewere in the Upper Denkyira East municipality of Central Region.

In a conversation with an employee of Perseus Mining (Ghana) Limited, a mining company in Ayanfuri near Dunkwa On-Offin, he brought to light some unpleasant findings. According to him more school children have dropped out of school in recent years, some joining in the illegal mining activities and others engaging in prostitution services demanded by the galamsey workers.

Farmers are also abandoning their farms to engage in galamsey because it is seen as a more lucrative venture. These operators also sabotage concessions that belong to legal mining firms. This sometimes interrupts the peace that exists between the mining companies and the communities in which they operate. The situation recently assumed alarming proportions when the Chinese joined in the galamsey operations in Ghana. However, unlike the indigenous galamsey operators who used rudimentary tools and technology to mine gold, the Chinese employ heavy,

invasive sophisticated machinery for the galamsey operations. This destroys the environment to a much greater degree than the local galamsey operations. Such activity cause irreversible harm.

The local galamsey operators also partner with their Chinese counterparts who provide capital and logistical support in the form of machines and vehicles. Galamsey operators do not pay taxes to the government for extracting minerals from the land. They do not have any control measures to minimise the negative effects of their activities on the environment. The rate of school dropout is on the increase and the firms that have the legal right to operate are not doing so in the safest environment.

It is therefore essential that this study is conducted on the socioeconomic impact of galamsey on lives of the residents whose communities have been evaded by galamsey operators. This will highlight the impacts on the social and economic activities of the people in the study location.

1.3 Research Question

What are the socioeconomic impacts of galamsey operations on Ayanfuri community?

1.4 Research Objectives

- To investigate the adverse effects of galamsey operations on the socioeconomic activities of the Ayanfuri community
- To investigate the positive impact of galamsey in the Ayanfuri community

- To verify what the mining companies can do to help resolve the situation
- To recommend strategies to help reduce the effects of galamsey on the socioeconomic lives of Ghanaians and if possible stop or reduce galamsey activities

1.5 Significance of the Study

- The research will contribute to the literature
- It will provide steps to either control or improve the activities of galamsey
- Findings from this research will be relevant information for:
 - The Ayanfuri community
 - Government
 - Relevant policy makers
 - Mining companies

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Gold mining in Ghana is done by both large-scale and small-scale mining companies. However, there are illegal forms of mining as well. This is popularly known in Ghana as “galamsey”. Also known as artisanal and small-scale mining, uncontrolled mining or illegal mining, galamsey has been part of the country’s mining history (Reisenberger, 2010). The indigenous people indulged in mining specifically gold mining before the arrival of the Europeans (Bawa, 2010). Then known as artisanal and small-scale mining, they used traditional mining techniques to locate and extract gold from gold bearing rocks or earth. Artisanal and small-scale mining (ASM) refers to mining by individuals, groups, families, or cooperatives with minimal or no mechanization, often informally and/or illegally (Hentschel *et al.*, 2002 quoted in Ingram V. *et al.*, 2011). It was then not an illegal activity because there were no laws that described it as such. They were experts in the field. There was also alluvial gold mining along the coastal belt mostly in rivers and other water bodies.

From 1957 to 1989, any form of mining other than large-scale mining was seen as illegal because such activities were unregulated and uncontrolled by the government. These activities led to hazardous cases on the environment such as deforestation, pollution and unfertile farmlands. This however, did not stop the local people from partaking in galamsey. They mined anywhere they deemed rich in gold deposits without any control mechanisms.

As part of the country’s Economic Recovery Plan launched in 1983, the mining sector experienced some changes (Akabzaa and Darimani,

2001). In 1989, the government passed a law that legalized small-scale mining in the country. This law was the Small-Scale Mining Law (PNDC Law 218) (Reisenberger, 2010). When small-scale mining licenses are issued, the holder(s) have a permit that gives them the right to engage in mining on assigned concession. This way, mining activities are easier to regulate and control by authorities. The government also established the Precious Minerals Marketing Corporation (PMMC) tasked to purchase the mineral products from the small-scale miners. This provides them with a market for their produce (gold and other minerals).

The Small-Scale Mining Law was however not a total success story for the government. According to Reisenberger (2010), most of the artisanal miners still operate without licenses in the country. This has been attributed to the frustrations they encounter in the registration processes (Akabzaa 2009 quoted in Reisenberger, 2010) and in other cases due to ignorance. Those who were not and still remain unregistered are what in this paper referred to as '*galamsey*'.

In Namibia, the story is practically the same. According to Nyambe et al. (2009), out of 2000 small scale miners in 2004, just 20% were registered to operate, leaving majority of them unregistered hence their activities were illegal. The reasons were also because of the expensive and cumbersome nature of the processes in attaining the licences.

Galamsey in this paper is therefore defined as a type of mining where unlicensed group of individuals come together using crude and sometimes refine methods to mine gold. The term *galamsey* became popular in the mid 1970's when the country's economy started declining and people looked elsewhere to supplement their incomes (Owusu et al., 2012). It was coined

from the phrase “gather them and sell”. Galamsey operators work in groups for several days after which they gather their mining extracts and sell to local buyers.

The only difference between galamsey mining and small-scale mining is the legality of their operations. Galamsey like small-scale mining, employs less technology and hence is labour-intensive. They use simple tools like shovels, pick-axes, pans, brackets, chisels and hammers (Reisenberger, 2010). Unlike small-scale mining according to the laws of Ghana, galamsey mining does not occur on legally acquired concessions. Galamsey operators move to areas that are alleged to have gold deposit and start prospecting for gold.

According Tieguhong et al. (2009), artisanal and small-scale mining is characterised by some socioeconomic factors which include;

- “Low income in economies characterised by low level of earnings
- Provision of accessible livelihoods to poor and marginalised people
- Alluvial mining along rivers
- Minimal start-up time, capital and technical input
- Frequently labour-intensive, employing semiskilled or unskilled workforce
- Low levels of mechanisation, production, productivity, recovery and efficiency
- Simultaneous engagement of workers in other low-income activities such as subsistence agriculture” (Tieguhong et al. 2009)

2.2 Causes of Galamsey

Galamsey is mostly found in the rural mining areas in the country. These areas include Tarkwa, Bogoso, Prestea, Obuasi just to mention a few as showed on the map in *Figure 1., in APPENDIX A*. One of the major reasons people engage in galamsey is the unemployment situation in the Ghana. According to the Africa Economic Outlook “the population in the 15-24 age group has an unemployment rate of 25.6 %, twice that of the 25-44 age group and three times that of the 45-64 age group” (Africa Economic Outlook, 2012).

According to the International Labour Organization (ILO, 1999), an estimated 13 million people work directly in galamsey worldwide (Hilson et al., 2010). There are also an extra 100 million people indirectly dependant on galamsey (Danielsen et al., 2000; CASM, 2009 qtd. in Ingram et al., 2011).

In rural Ghana, the dominant occupation is farming. Other people also turn to partake in income generating activities that easily come up such as fishing and rearing livestock among others. In this case, people engage in galamsey because it is the alternative source of livelihood. In other African countries, both small-scale mining and galamsey provides employment for many people. In Ghana, galamsey employs about 170,000 people (Adjei et al., 2012). It employed 1000 in Burundi and between 50,000 to 350,000 in Zimbabwe in 1999 (Nyambe, et al., 2009).

Another reason people engage in galamsey is poverty. According to Nyambe et al. (2009), poverty is one of the major reasons people indulge in galamsey. Poverty in most African countries is high and Ghana is not an exception. As part of the Millennium Development Goals set by the United Nations, Ghana and many other countries are required to reduce poverty

levels. In a research paper, 'Small-Scale Mining and Its Impact on Poverty in Namibia: A Case Study of Miners in the Erongo Region', it was established that small-scale mining including galamsey contributes to poverty alleviation (Nyambe et al., 2009). This is because it creates employment and income earning opportunities and sustains local business such as trading. In Ghana, galamsey can be seen as a lucrative source of employment for those who engage in it. They earn more than enough to escape the poverty line.

One other event that sometimes contributes to the occurrence of galamsey activities is the rainfall patterns in the country. According to Kuma et al. (2010), farmers in rural mining communities cultivate their crops during the rainy seasons. During the dry season where farming activities come to a standstill, some farmers engage in galamsey to earn some extra money. Also, some crops take a longer time to mature such as cocoa and rubber. Hence, to support their families and avoid idleness, they engage in galamsey.

2.3 Negative Effects of Galamsey

Mining in any form generally has adverse implications on affected communities. However, government and agencies like the Environmental Protection Agency (EPA), Minerals Commission, Forestry Commission and other concerned organizations try to ensure that the adverse effects of mining are controlled and minimized. To make this happen effectively, it is necessary to know who is mining what and where. It therefore requires that, all miners are legally registered and their activities monitored.

Galamsey, as mentioned earlier is illegal, unregulated and uncontrolled form of mining. For most galamsey miners, their main interest is to extract minerals and move on. Their activities may therefore have serious adverse implications on communities in which they operate. According to Opoku-Ware (2010), galamsey miners use crude methods to mine gold. This includes mining in water bodies while using mercury directly in these water bodies. Digging several feet underground, these pits are not well supported and occasionally serve as death traps to them and others. A galamsey pit is shown in *Figure 6. and 7. in APPENDIX A.* They mine indiscriminately without accurately knowing whether the area bears gold or not. The following are some adverse environmental impacts of galamsey.

2.4 Depletion of the Forest

Most parts of southern Ghana are covered in green vegetation. According to the Forestry Commission of Ghana, there are 260 protected areas in the country, most of which are forest reserves. These protected areas are all over the country and most of them possess a great deal of resources and minerals including gold. Galamsey miners extend their activities into the forest reserves and other protected areas (Ofei –Aboagye, et al., 2004). Their encroachments in the forest reserves presents a threat to wildlife, endangered species of trees and other natural habitats.

2.5 Pollution of Water Bodies

Many water bodies in mining areas have been heavily polluted partly due to the activities of galamsey. Their operations require the use of water, mainly to process milled rocks to finally acquire the gold component. They

use mercury throughout the process and runoff end up in the water bodies. According to Kitula (2005), mercury use by galamsey miners in the Geita District in Tanzania has potential deleterious impacts on the community. Due to the harmful nature of this chemical when exposed in the water bodies, it kills many aquatic lives that live in them. It also poses danger to people who depend on them for drinking, irrigation other purposes.

According to a documentary by Anas Aremeyaw Anas in 2011, the cost of treatment of water has escalated in the last several years because of pollution by galamsey activities in Ghana. Some of the chemicals used in galamsey such as cyanide and mercury in the water cannot be treated in treatment facilities in the country. Therefore, water is treated for other pathogens while these dangerous chemicals are left untreated.

2.6 Destruction of Farmlands

The Daily Graphic newspaper on April 9, 2013, again gave an interesting report on galamsey and farmers. Some farmers in the Upper Denkyira East District in the Central Region sold their farmlands to galamsey operator for "quick money". It was reported that an acre of cocoa farm was sold at GHC 6,500. Galamsey operators destroy these farmlands for the sake mining gold. Most of these farmlands will lose their fertility after these miners are done and gone because of the chemicals they used. This act if not stopped will have a long-term effects on the cocoa industry. This is not only because they will be losing their cocoa farms now but also, there will be no arable farmlands for crops like cocoa to thrive on.

2.7 Prostitution

Galamsey activities in many communities have led to the increase in prostitution by young women. This is because of the lucrative nature of the business. Sexually Transmitted Diseases (STD) such as syphilis, gonorrhoea and AIDS are on the increase as a result of prostitution and sexual promiscuity in mining communities (MIME, 2002; Akabzaa, 1997 quoted in Ofei –Aboagye, 2004). According to Hilson (n.d.) galamsey areas are vast becoming locations of widespread prostitution.

2.8 Child Labour

In Niger, there are about 250,000 children engaged in galamsey and quarries. Some poor parents sometimes push their children in hard labour jobs including galamsey to contribute to family income. Employers of these children also consider them as a source of inexpensive labour force. In other cases, children engage in galamsey for beneficial reasons to them.

According to Hilson (2010), children in the Talensi-Nabdam District mine with their parents in the galamsey business. As part of the reasons they do this is to finance their education and escape poverty.

2.9 School Drop-outs

Some students subsequently leave school to engage in galamsey because they perceive it to be a more lucrative venture. They prefer to mine for gold than to “waste their time” in the classroom. According to Owusu et al. (2012), some galamsey miners place priority on galamsey than education. Once they engage in the act and start to reap some benefit from it, they get inclined to stay and continue mining.

2.10 Government Intervention

The Government of Ghana has implemented many actions to discourage people from indulging in galamsey. The initial strategy was the legalization of galamsey (unregistered small-scale mining) in 1989. This is supposed to aid the government with the help of the Environment Protection Agency (EPA) and other agencies to monitor and control their activities. Regardless of this action, many galamsey operators were not registered and still operate without licences.

In 2006, the government with the help of the National Security organized a national 'sweep' of galamsey activities (Okoh et al, 2011). The aim was to remove galamsey operators from lands that had been given to foreign mining companies.

In 2013, the government again came up with another taskforce made up of some of the country's security forces. They were to put an end to the activities of galamsey miners. They also arrested some foreign participants of galamsey operations who were mostly Chinese. According to the Daily Graphic newspaper on July 3, 2013, 3,877 Chinese involved in galamsey were repatriated to China between 1st and 25th of June 2013 by the Ghana Immigration Service.

As part of actions to discourage child labour, the government and other concerned partners have increased educational support to who exactly. In 2007, Afrikids, a United Kingdom NGO in Ghana, with the help of the International Labour Organization (ILO), initiated a project called *Operation Sunlight*. (Afrikids, 2007 qtd. in Hilson, n.d.). The aim is to resettlement of former child miners from illegal child labour and back into

education and training. It was also to eliminate child labour involved in galamsey and other hazardous activities in the northern Ghana.

CHAPTER 3: METHODOLOGY

3.1: Introduction

The study can be described as both exploratory and descriptive in nature. This is because it investigated the impacts galamsey operations on the study area. It therefore led to the discovery of these impacts on the socioeconomic factor such as employment, education and farming in the study area. The research was also descriptive in nature because it sought to find out similar challenges faced and/ or benefits derived by other mining communities that have a growing number of galamsey operations.

3.2 Research Scope – Area and Population

This study was focused on Ayanfuri, a farming community in the Upper Denkyira West District in the Central Region of Ghana. It is about three hundred and fifty (350) Kilometres from Accra. It is also about forty (40) kilometres from the district capital, Diaso. Ayanfuri is positioned on the North-western part of the Central Region and shares a border with the Western Region on the map of Ghana (*see figure 1. in APPENDIX A*). The main occupation of the town is farming. The population of Ayanfuri was estimated at about 5,100 people and almost every family owns a farm. However, a significant number of the people (mostly the youthful population) in the town were engaged in galamsey operations.

In 2012, a mining company, Perseus Mining (Ghana) Limited began commercial production of gold in the company's Edikan Gold Mine situated in Ayanfuri. The company has six hundred and fifty (650) square kilometres of tenements centred on the Ashanti Gold Belt some 25km-65km from the 60-million-ounce Obuasi gold deposit. This including two mining leases

which are the focus of initial production for the Edikan Gold Mine (Perseus Mining (Ghana) Limited, 2013). However, prior to Perseus Mining (Ghana) Limited, other mining companies such as Cluff Natural Resource Limited and Central Ashanti Gold Mining Company mined in Ayanfuri.

Ayanfuri was mainly chosen for this research because of some reported cases of unrest between galamsey operators and employees of the Perseus Mining (Ghana) Limited over the company's concessions. The galamsey operators as a result, vandalized properties of the company including vehicles and threatened the lives of some employees.

3.3 Research Design: Type and Source of Data

The research used the Ayanfuri community as a case study. Data collected largely consisted of qualitative data because it did not involve numerical variables. Participants in this study were required to fill questionnaires and others were interviewed. However, some responses and data analysis were better described quantitatively. The study used both primary and secondary data as well.

3.3.1 Primary Data

The findings of this study were mainly established from the primary data. Primary data was direct information obtained from the people who were most likely to be affected by the operations of galamsey since they were the best people to tell their story. Through interviews and questionnaires, participants of the study provided in-depth information that

helped in arriving at the impacts the galamsey operations had on their socioeconomic activities.

3.3.2 Secondary Data

The study also dwelled on secondary sources of data, mainly research done by others and information that already existed, for instance the newspapers and other articles. This provided the research with a better overview of what had been established about similar topics elsewhere. The literature review provided both general and some specific information that were useful to the topic of this research.

3.4 Description of Sample

The sample of this research was drawn largely from the population of Ayanfuri. This involved galamsey operators, artisans, farmers, petty traders, teachers, the local authority (traditional leaders and district officials), the police, community members and employees from Perseus Mining (Ghana) Limited. For the purposes of this research, persons under these categories formed the community of Ayanfuri. The official language of the people of Ayanfuri is Twi.

3.4.1 Sample Size

The sample size for the research was 80 respondents. This number was chosen to gather enough information from the relevant participants of the research. This comprised of the following number of respondents in each category:

Table 1: Response rate

Category	Sample Size	Number of Respondents	Response Rate
Galamsey Operators	30	30	100%
Artisans	2	2	100%
Farmers	2	2	100%
Petty Traders	2	2	100%
Teachers in two local schools	4	2	50%
Local Authority: District Office	4	3	75%
Employees of Perseus Mining (Ghana) Limited	10	10	100%
Local Police	6	0	0%
Community Members	20	10	50%

Source: Field Data, 2014

At the end of the data collection exercise, there were 61 participants representing 76.3% response rate.

3.4.2 Sampling Technique

The study used the convenience and snowball sampling technique. This was because of the delicate nature of the topic. As said earlier, the study required visiting operational sites that were not lawfully recognized.

It was therefore necessary to do with the available respondents. The snowball sampling technique was also used where the researcher was referred to some key respondents of the study.

3.6 Data Analysis

In analysing the research data, the researcher employed the use of content analysis technique. Content analysis was used to draw relevant information from the interviews conducted during the data collection of this study. Descriptive and graphical analyses were also used.

3.7 Research Limitation

The research faced some limitations during the data collection period. These limitations include the following:

- The major limitation of this research was the unavailability of some respondents and their unwillingness to partake in the study. One of the gamse operator said it was not safe to participate in the research. Also, schools in the community were on vacation so there were limited teachers and students involved in the research.
- The nature and locations of the gamse operational sites were such that, they were not easy to access hence visits to most gamse sites was not possible. The related effect here was therefore the difficulty in reaching potential respondents
- Also, important information were withheld by some respondents due to issues of confidentiality and those that were incriminating. The police station we visited declined our request due to this reason

- Another limitation was the resource constraints especially with time and cost. The research involved travelling to the research area from Accra

3.8 Ethical Consideration

The nature of this study required that ethical issues were addressed.

They include the following:

- The participants of this research were not forced to partake in the study. It was purely voluntary
- Approval from the galamsey operators, the Perseus Mining (Ghana) Limited and the other respondents were sought before data collection (for both interviews and administering of questionnaires)
- All participants of the study who wanted to maintain anonymity were respected
- Conclusions of the research were solely be based on the data collected and analysed from respondents

The questions in the interviews and questionnaires were asked such that, respondents do not give unreliable responses. The 88.75% of the respondents spoke Twi during the data collection. Data collected from recorded interviews were transcribed into English by the researcher.

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

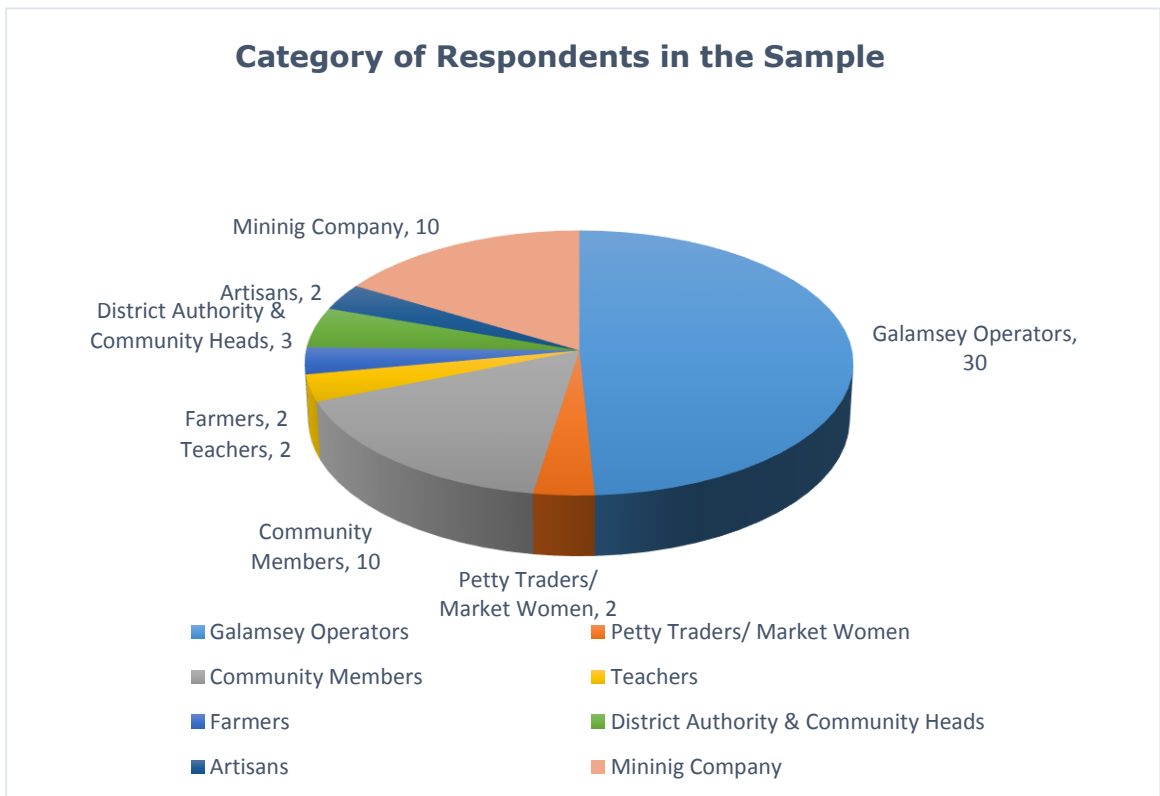
4.1 Introduction

This chapter focuses on analysing and discussing data collected from the Ayanfuri community. This will help answer the research question and to achieve the objectives of the research. Data collected using both questionnaires and interviews were analysed using tools like comparative and graphical analysis as well as content analysis where appropriate. The findings in the study were organized on the bases of the responses from participants of both interviews and questionnaires.

Interviews were conducted to obtain a first hand and in-depth information from the respondents of this study. Interviewed respondents included community heads, galamsey operators, market women, and artisans such as hairdressers, carpenters, and dressmakers. The respondents interviewed addressed some of the issues raised in the objectives of this study.

Questionnaires were also administered as a tool for collecting data from some respondents. These questionnaires were administered to some employees of Perseus Mining (Ghana) Limited, farmers, market women, and artisans. Some of the responses will be presented using charts and graphs.

Figure 1.1: The number of respondents in each category of the study



Source: Author's Fieldwork, 2014

The pie chart above in *Figure 1.1*, represents the number of respondents in each category of the study. There were a total of 61 respondents who participated in the study. No responses were gotten from the police in the community.

4.2 Respondents Responses on the Research Objectives

The first research objective was to identify the socioeconomic activities impacts (positive and negative) of galamsey in the Ayanfuri community. To achieve this objective, respondents were issued questionnaires and interviews were conducted. The responses to the objectives were obtained and grouped into social and economic which are discussed in the subsequent pages.

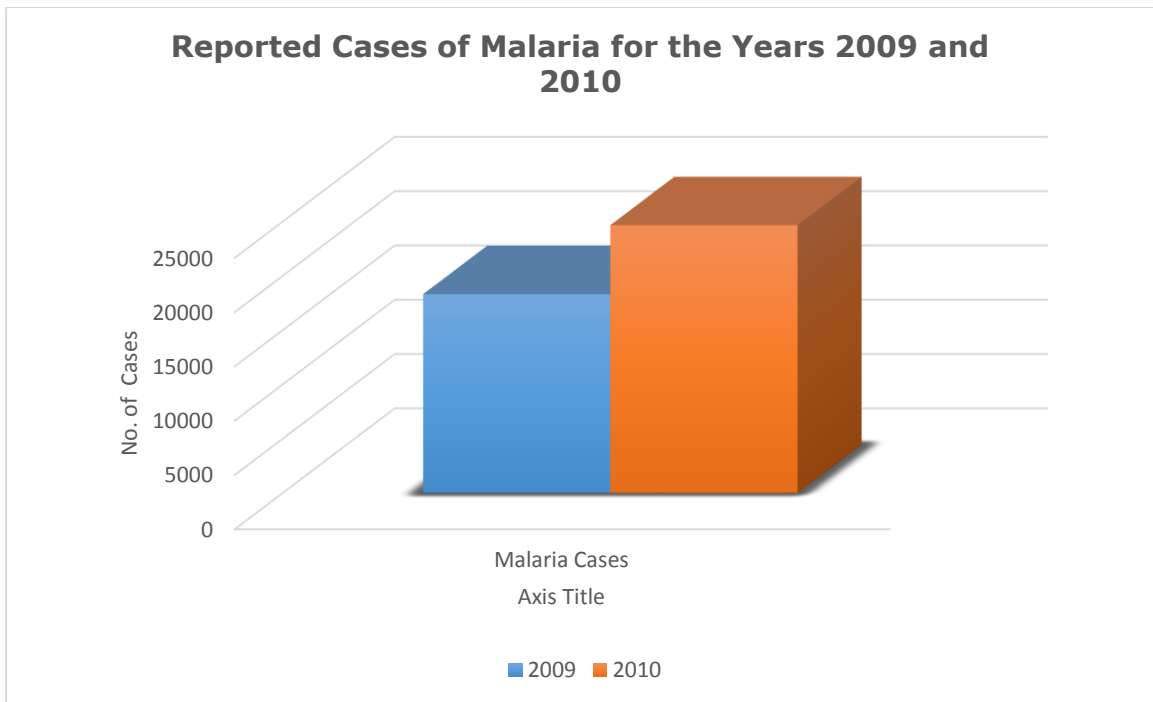
4.3 Responses on the Social Impacts of Galamsey Operations in Ayanfuir

In response to the impacts of galamsey operations on the social activities of Ayanfuri, some respondents spoke of the deaths caused by uncovered galamsey pits, a drop in school attendance of students, high cost of living. These impacts are discussed as follows;

4.3.1 Deaths and Malaria Case

Some galamsey operators dig both deep and shallow pits in their quest of finding gold deposits. After, these pits are dug and exhausted, these operators fail to refill them. The pits are left open and some collect water when it rains. These pits then become death traps. Some respondents mentioned that they knew people who lost their lives as a result of these uncovered pits. These people included galamsey operators, children, and other residents of the community. It also serves as breeding grounds for mosquitos and other disease carrying insects, which transmit diseases to people. (See in *Figure 3. in APPENDIX A*)

Figure 1.2: The Composite Budget of the Upper Denkyira West District Assembly for the 2012 Fiscal Year



Source: Upper Denkyira West District Assembly, 2012

The chart above shows the number of reported cases of malaria in the district. According to the Composite Budget of the Upper Denkyira West District Assembly for the 2012 Fiscal Year, malaria was the leading reported case in the six health facilities in the district of which three are in Ayanfuri. There were 18,312 and 24,667 cases were reported in 2009 and 2010 respectively. This can be related to some gamamsey activities as their dug pits collect water that breeds mosquitoes.

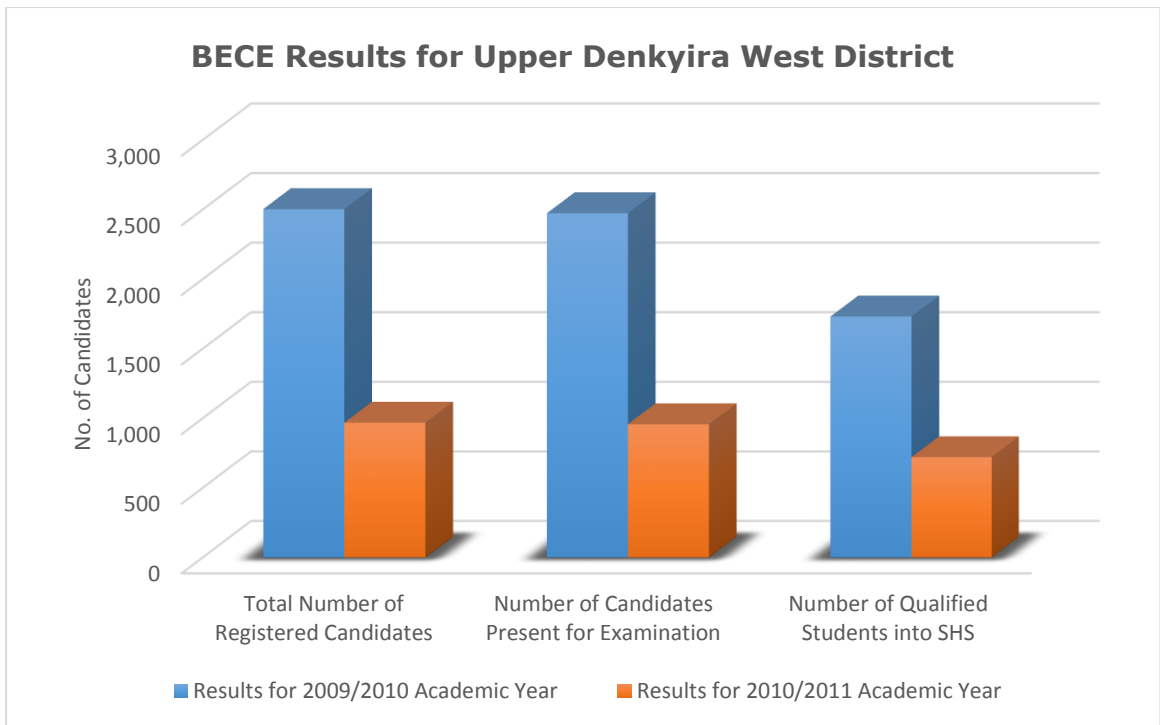
4.3.2 Drop in School Attendance

Respondents also commented on the school attendance of students in Ayanfuri. According to a senior high school teacher in Ayanfuri, some of her students skip school to engage in gamamsey for financial reasons. She said students' absenteeism affects their academic performance. When she was asked to describe how it affected the student's academic performance,

she said this: *“if you are to start a topic today, the next day the person will not come, as such he will not get the details of the study or topic and as such if you ask any assignment or a question in an exam, he cannot provide the answer because he was not there to know the details contained in that topic”*. Some students abandon class lessons to engage in galamsey making teaching and learning difficult for both teacher and student respectively.

According to a local junior high school teacher, galamsey is a very distractive and devastating activity. He said he knew many students who are involved in galamsey operations. He said, *“the students take delight in doing it because of the money they get from it”*. He also said that during occasions where there is an alleged detection of gold somewhere, some students either come to school very late or do not show up for school at all as they rush to the alleged site to prospect for gold. These attendance irregularities may be a cause of poor performance in examination. According to the Composite Budget of the Upper Denkyira West District Assembly for the 2012 Fiscal Year, the Basic Education Certificate Examination (BECE) for 2009/2010 and 2010/2011 academic year reduced with the number of candidate who sat for the examinations.

Figure 1.3: The Composite Budget of the Upper Denkyira West District Assembly for the 2012 Fiscal Year



Source: Upper Denkyira West District Assembly, 2012

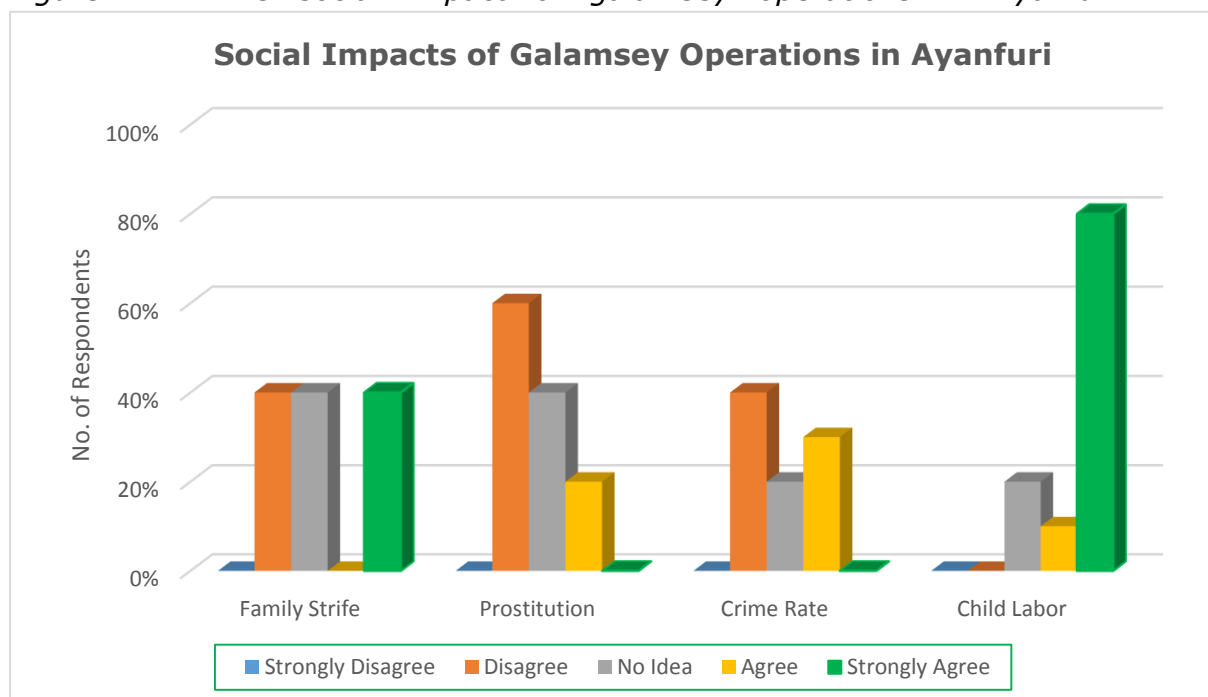
The graph above indicates a drastic drop in the number of candidates in who registered and sat for the BECE in the 2010/2011 academic year. The report links the challenges faced by the Education Directorate to *“inadequacy of qualified/trained teachers, lack of residential accommodation for staff and lack of material logistics, motorbikes and cars for effective monitoring and supervision”*. However, there is a high probability that galamsey activities had an effect on the drop in BECE candidates in the district.

4.3.3 Assessing Impacts of Some Social Activities

Some of the questionnaires were issued to community members including farmers, petty traders, tailors and welders. Respondents were asked to rank the possible impacts of galamsey (causing an increase) on

social activities like prostitution, crime rate, child labour and family strife¹. This was done using a scale of 1-5 where 5, represented strong agreement and 1 represented strong disagreement. Below were the responses.

Figure 1.4: The social impact of gamamsey operations in Ayanfuri



Source: Author's Fieldwork, 2014

From the chart above, 20% of the respondents strongly agreed that gamamsey operations had an impact on family strife in the town. Thus, gamamsey operations have caused some conflicts within families. Some of the conflicts arise because of the share of profits. Others are also because some parent(s) do agree for their children's involvement in gamamsey. 20% of the respondents also disagreed and the same number did not know of such occurrences.

Responses on prostitution were different because there were no instances where respondents strongly agreed. 30% of the respondents

¹ Family Strife is defined in this research as the conflicts that may arise within families because of gamamsey activities.

disagreed with that gamsung operations had resulted in the increase of prostitution. 20% of the respondents chose "no idea" for the issues. This was because respondents viewed the patronage of prostitutes as an individual issue. They also said that prostitution exists everywhere so gamsung had no influences on the issue. However, 10% of the respondents agreed that gamsung operations had had increased prostitution in the town.

On the issue of crime rates, 30% of the respondents said there was an increase because of gamsung operations. The main reason given was that the gamsung workers carry cash on them and this attracts thieves and armed robbers. 10% of the respondents did not have any insight on the issue. However, 20% of the respondents disagreed and blamed the increase crime rates on immoral conducts of the some youth in the community.

Lastly, on the issue of child labour, no respondent disagreed with the effect's gamsung has on child labour. 40% and 10% of the respondents strongly agreed and agreed respectively that gamsung operations had increased child labour in the community. This is because gamsung is a labour-intensive activity; hence children as young as 11 years are involved to reduce the cost of labour. Once these children are exposed to the reward (money), it becomes difficult to discourage them from working in the field. They get "addicted" to gamsung. However, 10% of the respondents said they had no knowledge on the issue.

Some respondents mentioned that gamsung improves their social status in the community. Most of the gamsung operators said their lives had seen significant improvement since they joined in gamsung operations.

Some of them have acquired properties such as buildings, vehicles television sets, among others. They also added that they are currently able to pay school fees of their children. Some other galamsey operators said they are also able to contribute financially to social events including funerals, weddings, parties and other events.

One galamsey operator revealed that he had to stop school and take care of his family when his father died. He said he is currently supporting his brother through the polytechnic. Some respondents also mentioned that they engage in galamsey to support themselves through school and to care for their families.

4.4 Responses on the Economic Impacts of Galamsey Operations in Ayanfuri

Respondents revealed some of the economic impacts attributed to galamsey operations in the community. The popular attribute of galamsey was source of employment to the people. According to the respondent interviews and questionnaires, galamsey is the main source of income to the youth from Ayanfuri, neighbouring communities and farther places in the northern parts of the country.

They also mentioned a boom in economic activities such as trading and an increase in the number of artisans like hairdressers, dressmakers, carpenters who enjoy a high profit on their businesses. Food sellers and drinking spots also had high patronage in their businesses. After a hard day's work, galamsey operators like to spend their money on food and

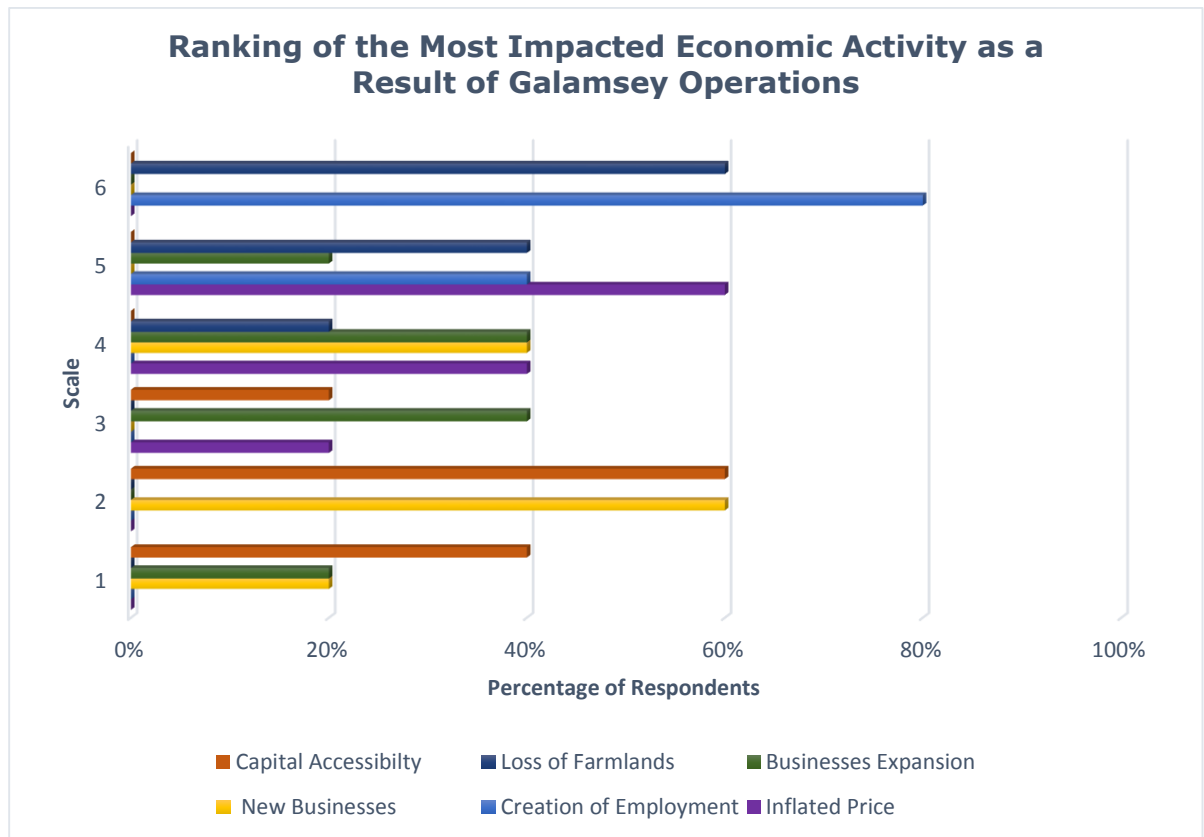
drinks for themselves and their families. They also earn enough to buy new clothes and acquire new properties like television sets, cars and build houses.

Galamsey is a very lucrative activity compared to other artisanal jobs like carpentry and masonry. A carpenter in Ayanfuri for instance is paid an average of GHC 4 per day. However, on a bad day, a galamsey worker earns about GHC 20 to GHC 30. In a week, a galamsey worker may earn GHC 500 and his master earns GHC 1,500 after paying off all expenses. According to one of the chief galamsey operators, some days he earns as much as GHC 2,000 a week. These earnings cannot be compared to the minimum wage of GHC 5.24 per day, according to the Trade Union Congress (Ghana) (2014). A galamsey operator's monthly earnings can be said to be higher than that of some workers who hold degrees or more across various industries in the country. This is in accordance with the literature in chapter 2.

Farming on the other hand, can be lucrative. According to the chief cocoa farmer of Ayanfuri, Mr. Godfred Kwarkye, an acre of cocoa farm has an average yield of 14 bags of cocoa per year. He said that currently, a bag of cocoa is sold at GHC 212 and on the average, a cocoa farmer in the town makes about GHC 247.33 per month. Therefore, if a farmer has more acres of cocoa farm, he will earn more income.

In response to the possible economic impacts of galamsey operations, respondents were allowed to rank the various impacts in order of the most impacted. The most impacted was ranked 6 and 1 as the least impacted. Based on these rankings respondents gave the following responses:

Figure 1.5: The most impacted economic activities as a result of galamsey operations



Source: Author’s Fieldwork, 2014

From the chart above, the most ranked economic impact of galamsey was the creation of employment for the locals such as food vendors. 80% of the respondents ranked on the scale of 6. Galamsey provide employment for the youth of Ayanfuri. According to some galamsey operators, the only mining company in the town has not provided enough employment for them. They therefore see galamsey is the best alternative source of employment. Some women also sell food and water around the galamsey sites, which serves as source of employment to them. They cook various dishes and sell to galamsey operators during their working hours.

The second most ranked impact was the loss of farmlands to the activities of galamsey operators. Galamsey operators make their discoveries on any type of land - farmlands, unused arable land. They work on these lands, which was or could have been arable farmlands for the people of Ayanfuri. Some farmlands have now been left impossible to farm on due to the damage cause because of the nature of galamsey operations. The top soil is washed away by the excessive use of water in their processes. The top soil on these farmlands contains the much-needed nutrients required for plant growth and survival. The land is left barren. Potential farmlands are lost as a result.

Inflation was ranked on the scale of 5 by 60% of the respondents. This is because prices of goods and services were high compared to neighbouring town like Dunkwa-On-Offin. According to some of the respondents, people involved in galamsey operations purchase goods services at any price stated. This because they have the ability to pay. Other people who are unable to pay are left disadvantaged because seller will not sell to them.

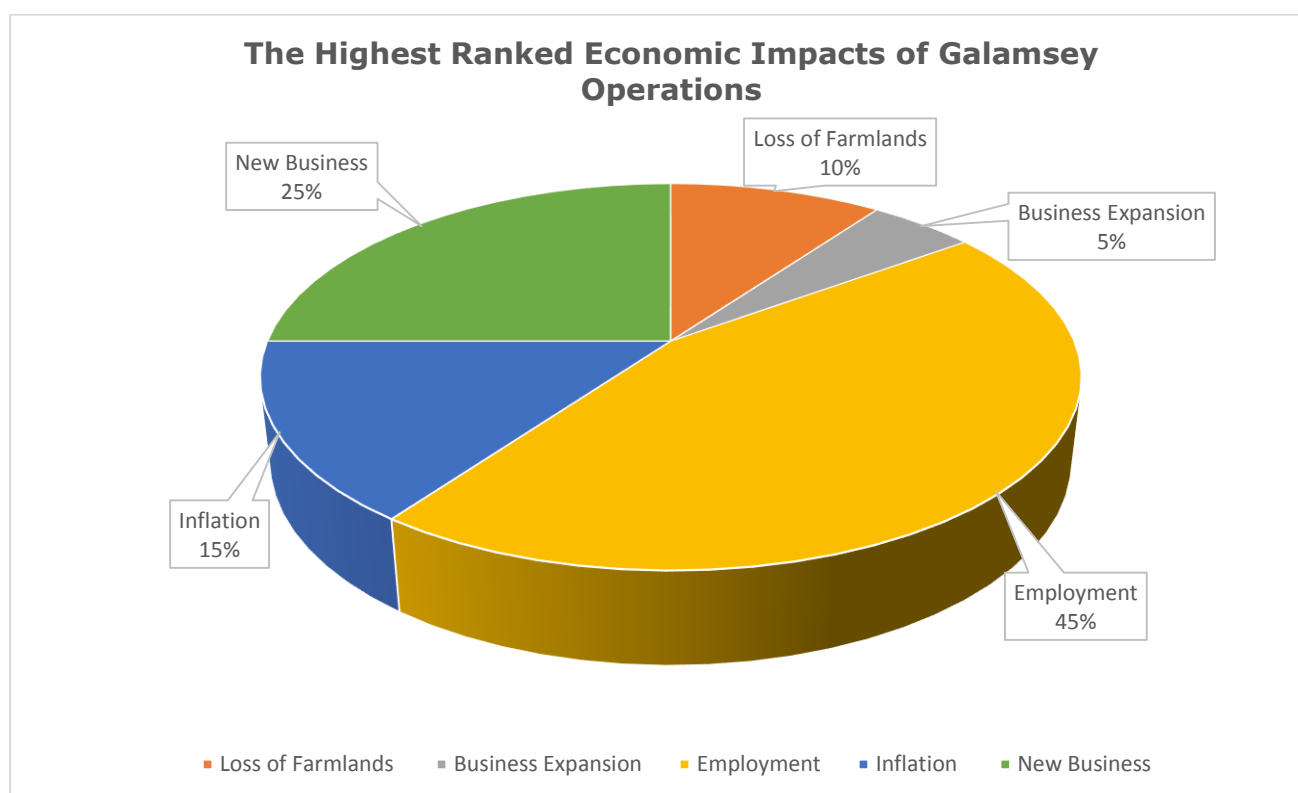
Galamsey operations also results in the expansion of businesses in the town. It was ranked on the scale of 6 by 60% of the respondents. Small businesses in the town such as provision shops, hairdressing salons, cold stores and other shops have expanded as a result of the increase in the demand for goods and services. These business owners earn enough profits to expand their businesses.

40% of respondents also ranked the creation of new businesses on the scale of 6. Galamsey operations have caused the creation of new

businesses in the town. These include micro-finance institutions, transport services, car washing bays, susu² and others.

On the other hand the least ranked economic impact were attraction accessibility to capital such as loans and credits. The concept of assessing loan was a popular concept in the town.

Figure 1.6: Highest ranked economic impacts of galamsey operations



Source: Author's Fieldwork, 2014

The above pie chart represents the five most ranked economic activities/ variables. From the chart, employment takes the largest share with 45%, creation on new businesses with 25%, inflation with 15%, loss of farmlands 10% and 5% for businesses.

² Susu is a localized form of baking amongst a group of people. Here, the susu collectors go round to businesses to collect a percentage of their profit periodically for safe keeping normally without interest.

Respondents also said that rent charges had shot up as a result of galamsey operations. They linked this to attitude towards prices by galamsey operators. Some other respondents also blamed the issue to the presence of the mining company. They said some people quoted rent in dollars.

As a result of movement of the youth into galamsey operations, farming activities have reduced. The number of farmers have reduced resulting in lower yields for the town. There are therefore shortages of farm produces making them even more expensive. They now rely on neighbouring towns and villages for some farm produce.

4.5 Some Responses on the Environmental Impacts of Galamsey Operations in Ayanfuri

Some respondents made some contributions on the environmental impacts associated with galamsey operations. They mentioned water pollution and depletion of the vegetation cover and forest.

On the issue of water pollution, most of the respondents pointed out that, galamsey miners divert streams and other water bodies to aid in their operations. The wastewater however finds its way into their main sources of potable water. Mercury, the main chemical mentioned by most of the galamsey operators, was used in processing the gold. When this chemical comes into contact with water, it becomes difficult to control. There are no precautions to prevent wastewater from flowing back into the main source.

Mercury is not only a poisonous chemical to the health of people it is exposed to but also to aquatic life and other living organisms. However, most of these operators do not know the effects of this chemical on them and the environment. All they know is that it is a catalyst for the process of acquiring the gold. These water bodies cannot serve as good source of farm irrigation.

4.6 Responses from Employees of Perseus Mining (Ghana) Limited

The research also covered the only mining company in the Ayanfuri. Information gathered from the Perseus Mining (Ghana) Limited, indicated that:

- The company is aware of the presence of galamsey operators in the town
- About 20% of the company's workforce are natives of Ayanfuri
- The company is not the reason for the influxes of galamsey operations in the town because it was practised before the inception of the company

As part of the many impacts of galamsey operations, the employees of the mining company listed some direct impacts on the company. These impacts are listed below:

- Galamsey operators are constantly working on the company's concessions, which cause interruption in the company's operations. It also poses a threat on the lives of these galamsey operators because of the heavy equipment the mining company uses

- There have been conflicts between the company and galamsey operators over the use of the company's legally acquired mining concessions
- Security threats and attacks on employees of the company because of conflicts over mining concessions
- Pollution caused by galamsey operators in and around the company's mining concessions have wrongly been blamed on the company by the Environmental Protection Agency (E.P.A) and Mineral Commission
- It creates an atmosphere of uncertainty. This is because personal safety is not guaranteed because of their presence. Some employees have had their lives threatened by these galamsey operators with machetes and other weapons

The employees provided some strategies that the company could put in place to reduce the socioeconomic impacts of galamsey. The following were suggested:

- Since galamsey activities are illegal, it should be left to the government to deal with the problems
- Engaging them through meetings and education
- Improve security presence in and around the company premises
- Support the communities in economic ventures such as farming

- Look for other viable economic ventures and introduce/support them to engage in it, this will give them an alternative livelihood
- Liaise with military patrols to control their galamsey activities
- Continuous sensitization of the people to desist them from engaging in galamsey
- Educate the youth, traditional leaders and stakeholders on the future impacts of galamsey activities on the land and water bodies
- Dialogue and introduce capacity building scheme for interested community members
- Engage and educate community members on mining laws and regulations and help them acquire permits and concessions of their own
- The company can also expand its employment intake and employ more of the locals

4.5 Summary

From the findings above, most of the issues raised in the literature review were present in this research. Issues raised about child labour, employment opportunities, inflation of prices of goods and services amongst other were confirmed from this research. However, the issue of prostitution did not receive much attention in this research as the literature did. Many of the respondents thought such issues were related to personal moral standards and does not have any relationship with galamsey operation.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on providing recommendations that can be used to reduce the socioeconomic impacts of galamsey in the Ayanfuri community and other places with similar issues raised in this study. The chapter also draws conclusions on the study and suggest further research on galamsey.

5.2 Conclusion

There is no doubt that galamsey provides employment and a means of livelihood for some people of Ayanfuri community and similar places in a country where unemployment rate is high. Also because of the lucrative nature of galamsey, people are more inclined to partake in galamsey activities.

However, galamsey come with its costs to the society and the nation as a whole. Not only does galamsey confer contemporaneous costs on society in terms of lost farmlands, lost jobs for farmers, school dropouts and polluted rivers, it also imposes intergenerational cost on society such as the permanent depletion and desertification of land that was essentially pristine forest. The findings of this research further highlighted some of these costs. These include child labour, loss of arable farmlands, inflated prices of goods and services in affected areas and many others. This research shows that there are some socioeconomic impacts of galamsey operations in Ayanfuri.

5.3 Recommendations

The government of Ghana over the years has laid down measures to control the activities of galamsey operations in the country. The government's main strategy is the use of taskforces made up of security personnel who go into galamsey sites to stop operations. This is more of a "forceful" way of controlling galamsey operations. This research however provides the following recommendations that are friendlier to control galamsey operations in Ayanfuri and other places affected by galamsey:

- There must be an intense public education and sensitization about the dangers of galamsey operations. To make this effective, traditional leaders and the local authority must be in constant dialogue with members of the communities. This is because they are in a unique position to interact with community members than the security taskforce
- Parents must be educated to appreciate the value of formal education to ensure that their children stay in school
- There must be scholarships available for needy children to enable them further their education other than depending on galamsey as a source of income to finance their education
- Children in affected communities must go through mentorship programmes, covering various aspects of their lives. People of good influence in and around these communities can serve as mentors for these children. They may include pastors, doctors, teachers, nurses, traditional leaders and others
- Making galamsey legal by helping galamsey operatives form mining corporative groups to acquire small-scale mining licences which can

be regulated by the regulatory bodies (EPA and Minerals Commission)

- Farming cooperatives in the community must be encouraged as an alternative livelihood program and ensure food security
- The mining company should purchase all its food crops from the local farmers in the community to encourage farming
- The importation of galamsey equipment from China and other counties should be banned

5.3 Further Studies

Further research could be conducted to investigate the impact of galamsey operations on mining companies in Ghana.

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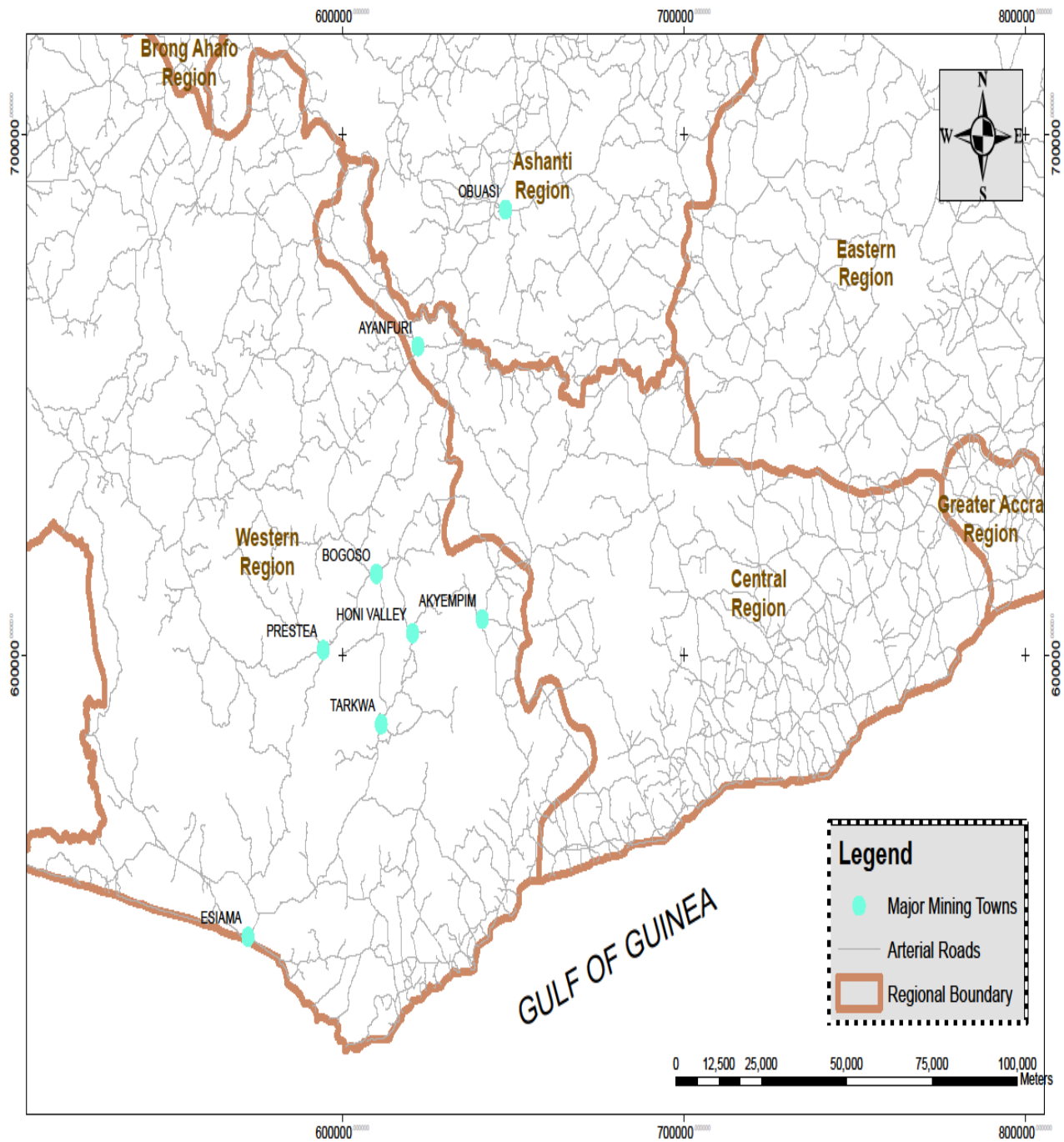
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APPENDIX A

Figure 1. A map showing some mining areas and the position of Ayanfuri.



Source: Author's Fieldwork

Figure 2. Effects of gamamsey operations on the land.



Source: Author's Fieldwork, 2014

Figure 3. Abandoned gamamsey pit filled with water.



Source: Author's Fieldwork, 2014

Figure 4. Galamsey operational site.



Source: Author's Fieldwork, 2014

Figure 5. Galamsey operational site.



Source: Author's Fieldwork, 2014

Figure 6. Galamsey pit



Source: (Google Images)

Figure 7. Galamsey pit



Source: (Google Images)

Table 1.: List of *Level A* Gold Mining Companies in Ghana as at 2012

Gold Mining Company	Location
Adamus Resources	Esiama, Western Region
AngloGold Ashanti	Obuasi, Ashanti Region
AngloGold Ashanti Iduapriem	Tarkwa, Western Region
Chirano Gold Mines	Bibiani Western Region
Gold Fields Ghana	Damang, Western Region
Gold Fields Ghana	Tarkwa, Western Region
Golden Star	Tarkwa/ Bogoso, Western Region
Golden Star	Akyempim Western Region
Newmont Ghana Gold	Kenyansi, Brong Ahafo
Newmont Ghana Gold	New Abirem, Eastern Region
Perseus Mining (Ghana) Limited	Ayanfuri and Nanankwa, Central Region

Information from the Ghana Chamber of Mines (2012)

APPENDIX B

To the Respondent: Please be advised that this interview is for academic purposes only and that you are participating in this study out of your own free will. The study is trying to understand the socio economic impacts of Galamsey operations on the lives of the residents of Ayanfuri which is located in the Western region of Ghana. Please be assured that all information collected in this interview will be treated confidentially. Your identity will never be revealed and the results of the research can be communicated to you should you so desire.

INTERVIEW QUESTIONS: (Galamsey Operators)

1. Do you live in Ayanfuri?
2. How long have you been living in Ayanfuri?
3. If not where do you live?
4. Why did you decide to engage in galamsey?
5. Apart from galamsey do you have any other occupation?
6. What are your other sources of income?
7. Do you pay taxes or fees on galamsey?
8. If yes, how much do you pay?
9. Who do you pay taxes to?
10. How much do you earn a month as a galamsey operator?
11. What was your income level before you started galamsey?
12. To what extent has your livelihood improved because of Galamsey?
 1. If you had another job, will you stop galamsey? Why or Why not
13. Do your children work with you in galamsey?
14. How do you your children working in galamsey affects their future prospects?
15. Do you think education is important? If yes, why are your children not in school?
16. Why are galamsey operators able to operate in Ayanfuri without being harassed by the authorities or being arrested?
17. How do you think galamsey affects the people of Ayanfuri economically
 - Jobs, inflation e.g. transportation cost, rents

18. How do you think galamsey affects the people of Ayanfuri socially?
- family strife e.g. children attracted to child labour in galamsey pits
 - galamsey operators chasing wives of local people, prostitutes attracted to the area because of wealth of galamsey operators, crime such as robbers and armed robbers
19. Are there any Chinese galamsey operators in Ayanfuri?
20. What is the relationship between Chinese and Ghanaian galamsey operators like?
21. How Do you think galamsey activities affect rent prices in Ayanfuri
22. How Do you think galamsey activities affect food and transport prices in Ayanfuri
23. The following are examples of services that galamsey Operators may need to operate successfully. Identify those that you use have personally seen being used by galamsey operators and describe why you think these jobs exist because of galamsey:
- **i) Labourers for hire who dig for pay**
 - (ii) Transportation operators e.g. taxi drivers, tro-tro drivers and truck drivers**
 - (iii) food vendors**
24. Briefly describe how you actually undertake galamsey?
25. Describe a day in the life of a galamsey operator?
26. In what ways does galamsey affect the environment in Ayanfuri?
27. What has been the effect of galamsey on rivers in Ayanfuri?
28. What has been the effect of galamsey on sanitation in Ayanfuri?

INTERVIEW QUESTIONS: Community members (Artisans, Farmers, and Petty Traders)

1. Do you live in Ayanfuri?
2. How long have you been living in Ayanfuri?
3. What is your occupation?
4. What do you know about galamsey?

5. Describe Ayanfuri before gamamsey started (occupation, lifestyle of the people, the main sources of livelihood etc).
6. Has there been an increase in gamamsey operations in the town?
7. If yes, what do you think are the contributing factors to this increase?
8. Are there specific times in the year when gamamsey activities escalate?
9. If Yes, what are these seasons and why is there an explosion of gamamsey activities during this time of the year?
10. Do you think gamamsey has attracted in-migration from other places to Ayanfuri?
11. Does the population of Ayanfuri increase during peak gamamsey period and decline thereafter?
12. Do you think gamamsey has resulted in an increase in crime?
13. What are the most typical crimes committed that can be associated with gamamsey?
14. Describe *negative economic* impacts of gamamsey on Ayanfuri
15. Describe *positive economic* impacts of gamamsey on Ayanfuri
16. Describe *negative social* impacts of gamamsey on Ayanfuri
17. Describe *positive social impacts* of gamamsey on Ayanfuri
18. Describe *environmental impacts* of gamamsey on Ayanfuri
19. How does gamamsey affect your livelihood?
20. How does gamamsey affect your family?
21. Do you think gamamsey has decreased the incentive for people of Ayanfuri to migrate out of Ayanfuri
22. -Do you think there should be an end to gamamsey operations in the community? Why?

INTERVIEW QUESTIONS: (Teachers)

1. How long have you been teaching in this school?
2. Have thought elsewhere before? Where?
3. How is the experience different from teaching in this school?
4. What do you know about gamamsey operations in this town?

5. Do you know any student involved in galamsey operations? If yes, what are their ages and are they forced to do so?
6. How does it affect the school attendance?
7. What do you think should be done about the situation?
8. Describe *negative economic* impacts of galamsey on Ayanfuri
9. Describe *positive economic* impacts of galamsey on Ayanfuri
10. Describe *negative social* impacts of galamsey on Ayanfuri
11. Describe *positive social impacts* of galamsey on Ayanfuri
12. Describe *environmental impacts* of galamsey on Ayanfuri
13. How does galamsey affect your livelihood?
How does galamsey affect your family?
14. Do you think there should be an end to galamsey operations in the community? Why? How can galamsey be ended?

INTERVIEW QUESTIONS: (District office)

1. Are you aware of galamsey operations in the community?
2. Do you consider galamsey a crime?
3. Why are the galamsey operators able to operate with impunity without being arrested?
4. Describe some of the negative economic impacts of galamsey on Ayanfuri? E.g. loss of jobs by farmers because lands are destroyed and loss of jobs by cattle-herders because the vegetation is destroyed.
5. Describe social impacts of galamsey on the residents of Ayanfuri
6. Describe some of the negative environmental impacts of galamsey on Ayanfuri? E.g. destroying the rivers, water bodies and wetlands, poisoning of the land by the use of very dangerous non-biodegradable substances
7. What efforts have you made to stop galamsey or reduce its negative effects?
8. Do galamsey operators pay tax?
9. How does galamsey affect your ability to provide infrastructure for Ayanfuri

10. What are the social impacts of galamsey on Ayanfuri? (Prostitution etc)

INTERVIEW QUESTIONS: (The Police)

1. Are you aware of galamsey operations in the community?
2. Do you consider galamsey a crime?
3. Why are the galamsey operators able to operate with impunity without being arrested?
4. What action do you take when you get a report that there are some galamsey operations taking place in a particular town?
5. Describe some of the negative *economic impacts* of galamsey on Ayanfuri? E.g. loss of jobs by farmers because lands are destroyed and loss of jobs by cattle-herders because the vegetation is destroyed.
6. Describe some of the *negative environmental impacts of galamsey* on Ayanfuri? E.g. destroying the rivers, water bodies and wetlands, poisoning of the land by the use of very dangerous non-biodegradable substances
7. What efforts have you made to stop galamsey or reduce its negative effects?
8. What are the social impacts of galamsey on Ayanfuri? (Prostitution etc)
9. Do you think galamsey has attracted in-migration from other places to Ayanfuri?
10. Do you think galamsey has resulted in an increase in crime?
11. What are the most typical crimes committed that can be associated with galamsey?
12. Describe *positive economic* impacts of galamsey on Ayanfuri?
13. Describe *negative social* impacts of galamsey on Ayanfuri?

QUESTIONNAIRES

To the Respondent: Please be advised that this QUESTIONNAIRE is for academic purposes only and that you are participating in this study out of your own free will. The study is trying to understand the socio economic impact of galamsey operations on the lives of the residents of Ayanfuri. Please be assured that all information collected in this interview will be treated confidentially. Your identity will never be revealed and the results of the research can be communicated to you should you so desire.

Perseus Mining (Ghana) Limited

Please indicate your choice of answers by checking Yes or No where appropriate. Otherwise fill in the information in the space provided.

1. Are there natives of Ayanfuir working in your company? Yes / No.

2. What percentage of your workforce are resident natives of Ayanfuir?.....

3. Are you aware of galamsey operations in the community? Yes / No.

4. How does galamsey impact on your life in the town?
.....

5. What are the impacts of galamsey operations on your company presence in the community?
.....
.....
.....

6. Do you think the influx of galamsey operations is as a result of your company presence? Yes / No

7. If your answer to 6 above is yes, what are your reasons? Explain in detail

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

15. Describe *negative economic* impacts of galamsey on Ayanfuir.

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16. Describe negative *social economic* impacts of galamsey on Ayanfuir.

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.....
.....

17. Describe negative *environmental economic* impacts of galamsey on Ayanfuir.

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

18. What can your company do to help reduce the socio economic impacts of galamsey operations in the community?

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

COMMUNITY MEMBERS (FARMERS):

To the Respondent: Please be advised that this QUESTIONNAIRE is for academic purposes only and that you are participating in this study out of your own free will. The study is trying to understand the socio economic impact of galamsey operations on the lives of the residents of Ayanfuri. Please be assured that all information collected in this interview will be treated confidentially. Your identity will never be revealed and the results of the research can communicated to you should you so desire.

1. Gender Male / Female
2. How old are you?
3. Are you married? Yes / No
4. Do you have any Children? Yes / No
5. If yes, how many Children do you have?
.....
6. How long have you been farming?
7. Do you have any alternative source of income apart from farming Yes / No
8. If Yes, what are your other sources of income.....
.....
.....
9. How much money do you spend a day on yourself and family?
.....
10. In your opinion, what is galamsey?
.....
.....
.....
.....
.....
11. Are any of your children involved in galamsey? Yes / No
12. Do you know any children involved in galamsey? Yes / No

13.What are the impacts of galamsey on farming in the town?

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

14.Does galamsey have negative effect on your yield? Yes / No

Explain,

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

15.Has galamsey had negative effect on the sizes of farmers' farms, the quality of the soil and water bodies that flow through Ayanfuri? Yes / No

16.If yes,

explain.....
.....
.....
.....
.....

17.Do you think galamsey is responsible for stress in your family? Yes / No

18.If yes,

explain.....
.....
.....
.....
.....

19. For each of the **possible social effects of galamsey below**, (and using a scale of 1-5 where 5 represents agreement and 1 strong disagreement) indicate whether or not you agree that the relevant social impact is due to galamsey

	5	4	3	2	1
Possible Social Impact of Galamsey	Agree	Somewhat Agree	I have no opinion	Disagree	Strongly Disagree
A. Family strife in Ayanfuri has increased because of galamsey					
B. Prostitution in Ayanfuri has increased because of galamsey					
C.					
D. Crime in Ayanfuri has increased because of galamsey					
E. Child Labor in Ayanfuri has increased because of galamsey					

20. Rank the following **social impacts from the least important (1) to the most important (4)**

	RANK
Possible Social Impact of Galamsey	
A. Family strife in Ayanfuri has increased because of galamsey	
B. Prostitution in Ayanfuri has increased because of galamsey	
C. Crime in Ayanfuri has increased because of galamsey	
D. Child Labor in Ayanfuri has increased because of galamsey	

19. Describe *negative economic* impacts of galamsey on Ayanfuri

.....

20. Describe negative *social economic* impacts of galamsey on Ayanfuri

.....

21. Describe negative *environmental economic* impacts of galamsey on Ayanfuri

.....

COMMUNITY MEMBERS (ARTISANS)

To the Respondent: Please be advised that this QUESTIONNAIRE is for academic purposes only and that you are participating in this study out of your own free will. The study is trying to understand the socio economic impact of galamsey operators on the lives of the residents of Ayanfuri. Please be assured that all information collected in this interview will be treated confidentially. Your identity will never be revealed and the results of the research can communicated to you should you so desire.

1. What work do you do?
.....
2. Gender Male / Female
3. Do you have any alternative source of income? Yes / No
4. How much money do you spend a day on yourself and family? Yes / No
5. How old are you.....
.....
6. Are you married? Yes / No
7. Do you have any children? Yes / No
8. If yes how many children do you have.....
9. In your opinion what is galamsey?.....
.....
.....
10. Are any of your children involved in galamsey?.....
11. If Yes why,
.....
.....
.....
12. Are you aware of galamsey operation in the town?
.....Yes / No

13.What are the impacts of galamsey on the town? Yes / No

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

14.Does galamsey have positive effect on your job?
..... Yes / No

If Yes

explain,.....
.....
.....
.....
.....

15.Does galamsey have negative effect on your job? Yes / No

If Yes, explain

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

16. For each of **the possible social effects** of galamsey below, (and using a scale of 1-5 where 5 represents agreement and 1 strong disagreement) indicate whether or not you agree that the **relevant social impact** is due to galamsey.

	5	4	3	2	1
Possible Social Impact of Galamsey	Agree	Somewhat Agree	I have no opinion	Disagree	Strongly Disagree
F. Family strife in Ayanfuri has increased because of galamsey					
G. Prostitution in Ayanfuri has increased because of galamsey					
H. Crime in Ayanfuri has increased because of galamsey					
I. Child Labor in Ayanfuri has increased because of galamsey					

17. Rank the following social impacts from the least important (1) to the most important (4)

	RANK
Possible Social Impact of Galamsey	
E. Family strife in Ayanfuri has increased because of galamsey	
F. Prostitution in Ayanfuri has increased because of galamsey	
G. Crime in Ayanfuri has increased because of galamsey	
H. Child Labor in Ayanfuri has increased because of galamsey	

18. Describe *negative economic* impacts of galamsey on Ayanfuri

.....

19. Describe *negative social economic* impacts of galamsey on Ayanfuri

.....

20. Describe *negative environmental economic* impacts of galamsey on Ayanfuri

.....

21. For each of the possible **economic effects of galamsey** below, (and using a scale of 1-6 where 6 representing most important impact) rank the following economic impacts of galamsey according to their importance. Also indicate whether the relevant economic impact positively or negatively impacts galamsey.

POSSIBLE <i>ECONOMIC</i> IMPACT OF GALAMSEY	Rank or	Positive or Negative
ON THE PEOPLE OF AYANFURI	Importance	
Rising Prices or Inflation (rising prices of rent, food, transport)		
Increased Employment (jobs created by services needed e.g. Food Vendors)		
Attraction of "new" businesses (e.g. ICT related jobs)		
Increase in scale of existing Businesses (more rich customers, bigger market)		
Farm loss because of galamsey activities (This leads to farmers losing jobs)		
Ability to access more capital for bigger project because of higher incomes		

Petty Traders

To the Respondent: Please be advised that this QUESTIONNAIRE is for academic purposes only and that you are participating in this study out of your own free will. The study is trying to understand the socio economic impact of galamsey operators on the lives of the residents of Ayanfuri. Please be assured that all information collected in this interview will be treated confidentially. Your identity will never be revealed and the results of the research can communicated to you should you so desire

1. What is your occupation?.....
.....
- 2 Gender Male / Female
- 3 Do you have any alternative source of income? Yes / No
- 4 If yes what is your other source of income?.....
.....
.....
.....
.....
- 5 How much money do you spend a day on yourself and family
.....
- 6 How old are you.....
.....
- 7 Are you married? Yes / No
- 8 Do you have any Children Yes / No
- 9 If yes how many Children do you have.....
- 10 In your Opinion what is galamsey?.....
.....
.....

11 Are any of your children involved in
gamamsey?.....

12 If Yes why,
.....
.....
.....

13 Are you aware of gamamsey operation in the town? Yes / No

14 What are the impacts of gamamsey on the town?
.....
.....
.....
.....

15 Does gamamsey have positive effect on your trade? Yes / No

If Yes, explain
.....
.....
.....

16 Does gamamsey have negative effect on your trade? Yes / No

If Yes, explain
.....
.....
.....
.....
.....

17 For each of the possible social effects of galamsey below, (and using a scale of 1-5 where 5 represents agreement and 1 strong disagreement) indicate whether or not you agree that the **relevant social impact** is due to galamsey.

	5	4	3	2	1
Possible Social Impact of Galamsey	Agree	Somewhat Agree	I have no opinion	Disagree	Strongly Disagree
J. Family strife in Ayanfuri has increased because of galamsey					
K. Prostitution in Ayanfuri has increased because of galamsey					
L. Crime in Ayanfuri has increased because of galamsey					
M. Child Labor in Ayanfuri has increased because of galamsey					

18 Rank the following social impacts from the least important (1) to the most important (4)

	RANK
Possible Social Impact of Galamsey	
I. Family strife in Ayanfuri has increased because of galamsey	
J. Prostitution in Ayanfuri has increased because of galamsey	
K. Crime in Ayanfuri has increased because of galamsey	
L. Child Labor in Ayanfuri has increased because of galamsey	

19 Describe *negative economic* impacts of galamsey on Ayanfuri

.....

20 Describe negative *social economic* impacts of galamsey on Ayanfuri

.....

21 Describe negative *environmental economic* impacts of galamsey on Ayanfuri

.....

22 For each of the possible **economic effects of galamsey** below, (and using a scale of 1-6 where 6 representing most important impact and

1 indicates the least important impact) rank the following economic impacts of galamsey according their importance. Also indicate whether the relevant economic impact positively or negatively impacts galamsey.

POSSIBLE <i>ECONOMIC</i> IMPACT OF GALAMSEY ON THE PEOPLE OF AYANFURI	Rank or Importance	Positive or Negative Effect
Rising Prices or Inflation (rising prices of rent, food, transport)		
Increased Employment (jobs created by services needed e.g. Food Vendors)		
Attraction of "new" businesses (e.g. ICT related jobs)		
Increase in scale of existing Businesses (more rich customers, bigger market)		
Farm loss because of galamsey activities (This leads to farmers losing jobs)		
Ability to access more capital for bigger project because of higher incomes of galamsey operators.		

Consent Form

Please consider this information carefully before deciding to participate in this research.

Research Topic: Assessing the Impacts of *Galamsey* Operations on the Socioeconomic Activities of Ghanaian Rural Mining Communities: A Case Study of Ayanfuri.

This research is to investigate the impacts of illegal mining operations popularly known as *galamsey*, on the socioeconomic activities in Ayanfuri, town in the Upper Denkyira West of the Central Region. Some studies have been done on similar topics involving other mining communities such as Tarkwa, Bogoso, Prestia amongst others. This research will therefore reveal some general effects that occur as a result of *galamsey* operations and other effects that may be connected solely to Ayanfuri. Stakeholders such as policy makers, community heads and members, and mining companies may be advised through this research to address some of the issues that may arise.

What you will do in this research: The research method will require that you partake in an interview or answer questionnaires concerning the *galamsey operations* as a possible source of finding the impacts of their operation in the Ayanfuri community.

Time required: Participation will take approximately 30 minutes to complete.

Risks There are no anticipated risks associated with participating in this study.

Benefits: At the end of the study, we will provide a thorough explanation of our findings at a presentation, where a representative of your organization will be invited so they can collect the information, seek

clarification etc. If you will want a copy of our findings as well, please insert your e-mail address here [_____].

Confidentiality: Your participation in this study will remain confidential, and your identity will not be stored with your data. Your responses will be assigned a code number, and the list connecting your name with this number will be kept with the faculty member under lock and key and destroyed immediately they data collected has been analysed.

Participation and withdrawal: Your participation in this study is completely voluntary, and you may refuse to participate or choose to withdraw at any time without penalty or loss of benefit. You may withdraw by informing the experimenter that you no longer wish to participate and no questions will be asked. You may also skip any question during the interview, but continue to participate in the rest of the study.

Agreement:

The nature and purpose of this research have been sufficiently explained and I agree to participate in this study.

Signature: _____

Date: _____