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REGULARISING SMALL SCALE MINING IN GBANE AND SHERIGU IN THE
UPPER EAST REGION OF GHANA: THE MINER'S PERSPECTIVE

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UPPER EAST REGION OF GHANA: THE MINER'S PERSPECTIVE

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DECLARATION

I hereby declare that the research work presented in this thesis is my own work and that, to the best of my knowledge, it contains no material previously used by another person for the award of a degree in any other University. The works of other authors used in this thesis have been duly acknowledged by complete references.

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ABSTRACT

The study sought to determine why small scale miners in Gbane and Sherigu, in the Upper East Region of Ghana, remain unregistered; understand acquisition processes for obtaining land for small scale mining and how miners could be supported to regularise their activities. It further identified license acquisition requirements for miners and assessed current forms and stages of regularisation of small scale miners' operations. The research strategy was case study with snowball as the sampling technique. Data was collected with a questionnaire from 40 respondent mine pit owners; 30 from Gbane and 10 from Sherigu. Two Focus Group Discussions were held in both communities with a total of 14 participants. The study also interviewed four Key Informants and used Direct Observation in collecting data. Factors that prevented miners from regularizing operations were; high cost of license, bureaucracy and its associated lengthy waiting periods for license to be processed, and lack of support or incentives for miners to regularize. Cost of acquiring a license included the statutory payments at some stages of the licensing process and the informal and unapproved fees paid to government officials. Miners in the study were mostly migrants (55%), from neighbouring communities and districts, but Ghanaians aged between 20 and 56 years. These miners operated on lands leased to them by community members and Chiefs. All miners interviewed went through various processes to acquire lands for small scale activities, which involved informal negotiations and verbal agreements. All lands released to miners were without tenure security. Miners in turn rewarded land owners, chiefs and other influential persons in the communities, after every excavation. All respondent miners met the basic license acquisition requirements on age and nationality. Most miners (80%) operated as individuals and 20% in groups but on smaller land sizes, often operating on less than an acre (0.4ha) of land. While 12.5% of miners possessed site plans of areas being mined; only 2.5% were operating with an environmental permit. In all, 10% of miners had started the process to get regularized and were at different stages of the process. The study identified access to credit, introduction of miner-sensitive and easy-to-use technologies, regular trainings, and availability of incentives or support as ways to encourage miners to regularise.

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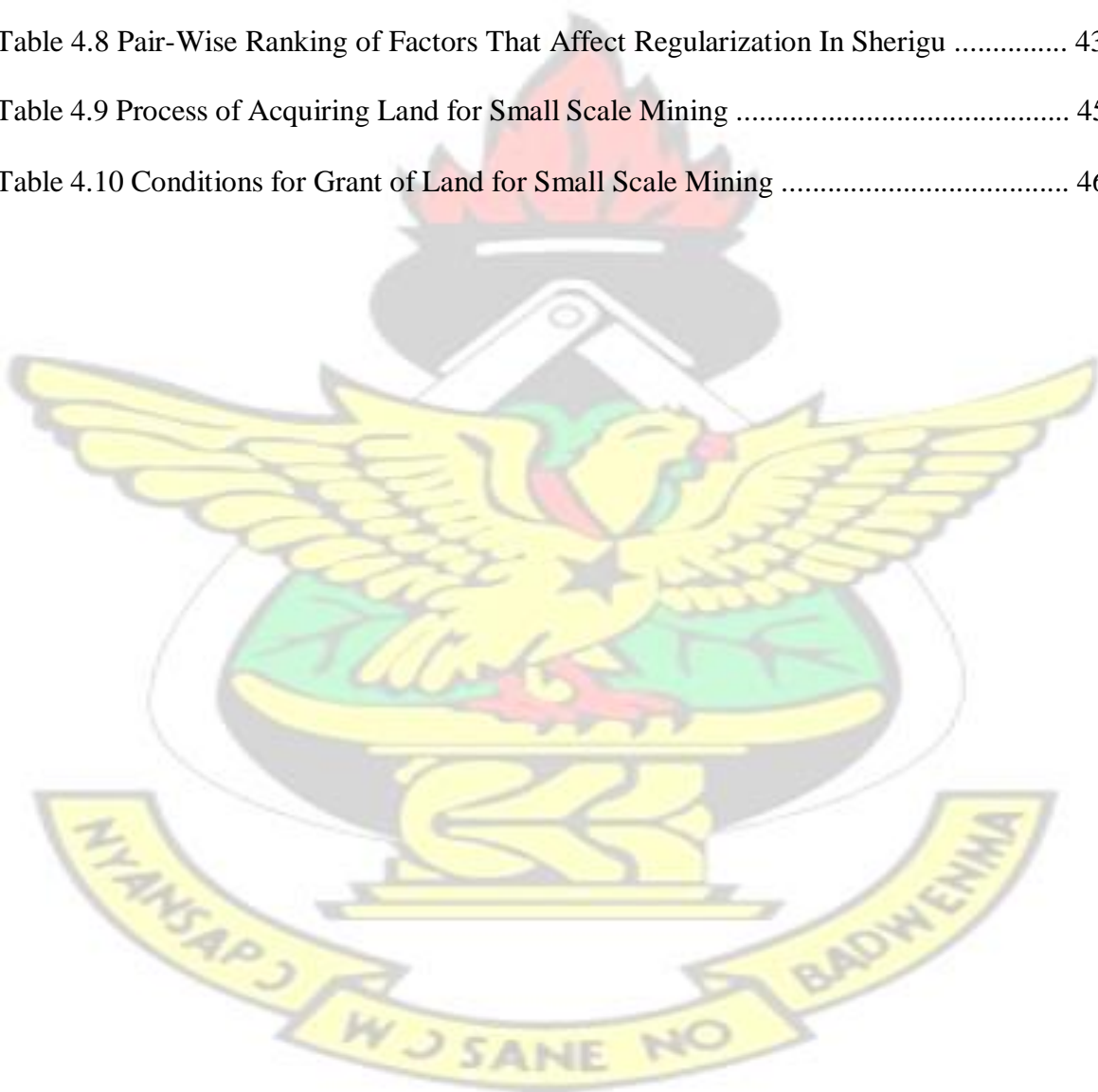
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LIST OF ACRONYMS

CSOs	–	Civil Society Organisations
EPA	–	Environmental Protection Agency
FPIC	–	Free Prior Improved Consent
GSD	–	Geological Survey Department
GSS	–	Ghana Statistical Service
ILO	–	International Labour Organisation
MC	–	Minerals Commission
MSD	–	Multi-Stakeholder Dialogue
NGOs	–	Non Governmental Organisations
PMMC	–	Precious Minerals Marketing Corporation
SPSS	–	Statistical Package for Social Sciences
SSM	–	Small Scale Mining
UN	–	United Nations
UNDP	–	United Nations Development Programme



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The term small scale mining has been defined in various ways using different criteria. However, the globally accepted definition of small scale mining, United Nations (1971) cited in Aryee *et al.* (2003), is based on two main factors; the equipment employed, often used to determine level of sophistication of operations, and production output. According to Dreschler (2001), “small scale mining refers to operations, organized into groups of 4 – 8 individuals or co-operatives of ten or more, which are entirely financed by existing resources at a certain limit; miners’ current but limited resources, and carried out on a fulltime basis using simple traditional techniques and tools of low mechanization levels”.

In Ghana, small scale mining is defined as “mining by any method not involving substantial expenditure by an individual or group of persons not exceeding nine in number or by a co-operative society made up of ten or more persons” (PNDCL 218; Minerals and Mining Act 2006). This definition includes (1) what has been termed „artisanal“, those operations using only rudimentary/artisanal implements, as well as (2) more sophisticated mining activities operating at a relatively low level of production and which generally requires limited capital investment (Aryee *et al.* 2003). For the purpose of this study, this will form the basis for the operational definition of artisanal and small scale mining.

Small scale mining is noted for its non-mechanised, labour intensive nature. Unlike large scale mining, small scale mining is rudimentary in design and characterized by highly manual processes. The typical small scale mine produces, although often sporadically, limited amounts of mineral from deposits with few known ore reserves and are extremely

low in terms of initial investment and high employment per-unit output (Hilson 2002a). Small scale mining has gained global importance both as a source of subsistence for the poor and as a cause of environmental degradation (Cleary 1990; Barry 1996; United Nations 1996). It is also associated with violent crime, armed conflict, forest degradation, mercury contamination, and the prevalence of malaria and sexually transmitted diseases like HIV/AIDS (Cleary 1990; Greer 1993; Macmillan 1995; Faas *et al.* 1999; Forte 2000; Banchirigah 2006). Many artisanal and small scale mining communities – including several across sub-Saharan Africa – have become „hotspots“, literally meaning major areas, for prostitution, disease and narcotics consumption (Hilson and McQuilken 2014).

Small scale mining is also seen as a last resort for poor, landless, unemployed, and poorly educated people, who hope through mining “to escape complete social marginalisation” (Schmink and Wood 1992; Naughton 1993; Veiga 1997; Heemskerk 2001) but according to Macmillan (1995), people who engage in small scale gold mining do not appraise the incomes or the health risks associated with mining realistically. Researchers have documented that both novices and many experienced miners exaggerate their chances of striking it rich, and appear either unaware of, or oblivious to, the environmental and health hazards of mining (Barry 1996; Rawana 2000). These researchers emphasise that either recklessness, a lack of realism, or an undefined “gold fever” De Vletter and Hakstege (1998) produce a rush to mining areas.

Hilson and McQuilken (2014) posit that most artisanal and small scale activities are not financed legitimately, owing to their unlicensed nature. Miners are therefore forced to secure finances through informal means. In some cases, professional miners who have developed impressive networks raise finances independently, or the mines are run on behalf of powerful gold dealers through intermediary services of licensed brokers (Van

Bockstael 2014). According to Van Bockstael (2014), though some licensed brokers readily admit to financing unlicensed as well as licensed miners, many miners are forced to look for funding among informal middlemen. Banchirigah (2008) also asserts that, because of the unlicensed nature of their operations, miners are often unable to secure financial support from banks and micro-credit institutions. They secure funds through informal channels – principally gold buyers, who sponsor activities in exchange for gold at belowmarket prices.

The small scale mining sector has been a source of employment for several people worldwide. It provides between 11.5 and 13 million direct employment to retrenched large scale mine workers, nomads, and seasonal farmers worldwide (Hilson and Potter 2003). Similarly, an International Labour Organisation estimate suggests that as many as 100 million rural inhabitants – including dependent family members and secondary tradesmen, such as blacksmiths, merchants and stone polishers – rely upon the incomes generated in the industry (ILO 1999). In Ghana, Aryee *et al.* (2003) estimate that about 80,000 locals, including women, are currently involved in the small scale mining of gold and diamonds but more recent studies by Bawa (2006 cited in Banchirigah 2008) and Hilson and McQuilken (2014) estimates the number of people directly engaged in illegal small scale mining to be over 1,000,000 with about 4,400,000 indirect dependents.

Realizing the importance of small scale mining in reducing poverty and promoting national development, the Small Scale Gold Mining Law of 1989 (PNDCL 218) was promulgated, together with two related laws; the Mercury Law (PNDCL 217) and the Precious Minerals Marketing Corporation Law (PNDCL 219) which, allow for the regularization of small scale mining activities. PNDC Law 218 went further to outline the processes small scale miners must go through to have their activities regularized. Although this opportunity to regularize small scale mining exists, most small scale miners in Gbane and Sherigu, both in the Upper East Region, work without licenses or due process, thus making their activities illegal.

The study aimed at determining why small scale miners in the study area remain unregistered; understand acquisition processes for obtaining land for small scale mining and how miners could be supported to regularise their activities. The study further assessed the forms or levels of regularisation with which small scale miners currently operate.

1.2 Problem Statement

An opportunity exists per the laws of Ghana for people engaged in small scale mining to register with the Minerals Commission and subsequently obtain licenses to operate on concessions allocated to them. However, informal talks with miners and Mineral Commission officials indicate that most small scale operators in Gbane and Sherigu still engage in the activity illegally, that is without registration. Findings by Hilson and Potter (2003) suggest that 85% of Ghana's small scale miners have not registered for permits, although the process is available.

These miners operate illegally, working without licenses and concessions of their own; and sometimes work within the concessions of large scale mining companies or in areas prohibited for mining such as forest reserves. Such miners are highly disorganized and operate as "hit and run" - literally meaning exploit and abandon once depleted. This often results in confrontations with both state law enforcement agencies and security personnel of large scale mining companies. These miners operate like nomads, ravaging every parcel of land worked on and subsequently abandoning these in search of more productive areas. In addition, several studies have been conducted in Southern Ghana on the issue of why most small scale miners still operate illegally. However, there is very little documentation of small scale mining in the North and not enough is known about illegal mining in Northern Ghana.

1.3 Justification and Expected outcomes

Small scale mining activities are characterized by the use of dangerous chemicals, destruction of vegetative cover, conflicts and other vices. These result in considerable damage to land cover, an exposure to health hazards and also limit the tendency to engage in other livelihood activities. The use of rudimentary processes and techniques to extract gold deposits, though cheaper in terms of initial investment, has several debilitating effects on the people and communities where these are applied.

In Ghana, the Small Scale Mining Law of 1989 (PNDCL 218) and now the Minerals and Mining Act of 2006 (Act 703) provide for monitoring of small scale mining activities hence allows for registering such activities. However, the activities of operators who choose not to register and obtain permits cannot be monitored and regulated. As a result, illegal operators tend to operate without regard for protecting land cover and reducing pollution. They have been cited in many instances for causing significant damage to land cover as well as causing pollution of water bodies (Aryee *et al.* 2003).

This study therefore sought to determine the perceptions of small scale miners about regularising their mining activities, explore how land is acquired for small scale mining in the area as well as identify how small scale miners can be supported to register their activities. Findings will be made available to local communities and development agents like Non-Governmental Organisations (NGOs) and Civil Society Organisations (CSOs), who would support policies and innovative interventions that meet the aspirations, needs and concerns of miners. This would go a long way in encouraging small scale miners to regularize their activities. Failure to do so, there could be an irreparable damage to land cover and water bodies and or huge future investments to remedy the effects of small scale mining.

By the end of this study, it is hoped that the perceptions of small scale miners in Gbane and Sherigu about regularizing their activities will be determined and reasons for their failure to regularize identified, processes for acquiring land for small scale mining understood, regularization stages and forms with which small scale miners operate assessed and how to encourage miners to regularise identified.

1.4 Aim and Specific Objectives

The aim of this study was to determine why small scale miners in the study area remain unregistered, understand acquisition processes for obtaining land for small scale mining and how miners can be supported to regularize their activities.

The specific objectives of the study were to;

- identify the factors that prevent small scale miners from acquiring licenses
- understand how land is acquired for small scale mining in study area
- To assess the various forms of regularization with which small scale miners operate and regularization requirements being operationalised
- To determine how miners can be encouraged to regularize their activities

To achieve the objectives and ultimately the aim of this study, answers to the following research questions were sought:

- What factors prevent small scale miners in Gbane and Sherigu from regularising their mining activities?
- How is land for small scale mining acquired and under what conditions?
- What forms of regularization do small scale miners currently operate with and which regularization requirements do miners presently meet?
- How can miners be encouraged to regularize their activities?

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CHAPTER TWO

LITERATURE REVIEW

2.1 History of Small Scale Mining in Ghana

Ghana was called the Gold Coast until it became independent in 1957 and assumed its modern name. In the fifteenth century, Europeans knew the West African coastal area as a source of gold that reached North Africa through the trans-Saharan trade routes. When the Portuguese arrived at the Gold Coast around 1471, they called their landing area La Mina, or The Mine, a pointed reference to the gold they discovered (Quartey 2013).

For centuries, gold was panned and mined from the quartz reefs of Ashanti by local gold seekers now called “galamsey”. The idea of organized, large scale mining began to gain strength only towards the end of the 19th Century. According to Quarshie *et al.* (1981) cited in Tsikata (1997), gold mining has been carried out by the natives for thousands of years long before the arrival of the Phoenicians on the Guinea Coast of West Africa. These traditional ways have mostly been on a small scale basis, depending on very rudimentary techniques and implements.

Today, the small scale mining sector in Ghana consists of those who operate using only rudimentary/artisanal implements, often referred to as “artisanal miners” and those operators using more sophisticated mining activities but producing below the standard capacity or efficient levels. According to Hilson and Potter (2003) and Carson *et al.* (2005), 85% or more of small scale miners in Ghana do not register for permits or licenses, although the opportunity exists.

Various legislation, which prohibited or limited small scale mining activities, stunted the growth of the small scale gold mining sector compared to the large scale sector, leading to a

domination of gold mining in Ghana by large scale mining companies, and nearly eradicated the small scale mining sector (Aryee *et al.* 2003). According to Aryee *et al.* (2003), artisanal activities, together with the marketing of gold from such activities, were considered illegal prior to 1989. This, however, did not deter small scale miners as they resorted to smuggling their gold output outside the country for sale through a well established black market. Outputs in turn enriched neighbouring countries, which were found to be exporting gold despite lacking significant gold deposits (Aryee *et al.* 2003).

About a decade and half ago some governments, on realizing the importance of artisanal and small scale mining, began to introduce some regulations and licensing schemes aimed at formalizing the practice. The idea was that formalizing operations would eliminate illegal smuggling channels, and would thereby enable the complete capture of internally mined product (Aryee *et al.* 2003). The successful containment of the minerals mined on a small scale would contribute enormously to sector revenues, and also contribute positively to foreign exchange earnings (Hilson 2001). Existing operators and „first timers“ were therefore required to go through a series of steps to enable them register their activities and subsequently obtain licenses to operate. Attempts to introduce these regularization schemes were also aimed at reducing illegal small scale mining as well as their associated adverse environmental impacts (Aryee *et al.* 2003).

As many as 100 million rural inhabitants – including dependent family members and secondary tradesmen, such as blacksmiths, merchants and stone polishers – rely upon the incomes generated from small scale mining (ILO 1999). Small scale mining remains an economic mainstay in rural sub-Saharan Africa, providing direct employment to over two million people (Hilson 2009). Ghana’s small scale sector, according to Hilson and Potter (2003), generates approximately 8% of the country’s gold, which, as a collective unit makes it the country’s fourth largest producer behind Ashanti Goldfields (now AngloGold

Ashanti), Goldfields Ghana Limited and Abosso Goldfields. Hilson and McQuilken (2014) suggests that a little over one million people are directly employed by the sector in Ghana, and that these people also have an estimated four million four hundred dependents.

Hilson (2009) opines that small scale mining was strongly associated with entrepreneurship throughout the late 1970s and 1980s. However the sector's rapid expansion, particularly in sub-Saharan Africa, and also because it provides employment to vulnerable groups, including women and children (Hilson 2008; Hilson and Banchirigah 2009), suggest that its existence was linked strongly to poverty. According to Labonne (2003) cited in Banchirigah (2006), „because small scale mining is largely driven by poverty, it has grown as an economic activity, complementing more traditional forms of rural subsistence earnings“. It has become a livelihood strategy adopted in rural areas which in many cases represents the most promising, if not the only, income opportunity available (MMSD 2002).

Notwithstanding the enormous job opportunities it provides to the vulnerable and other unemployed people, most public discussions on small scale mining have often emphasized its negative attributes (Spiegel and Veiga 2010). Small scale mining is known for its destruction of vast landscapes and, in the case of gold panning, releasing significant quantities of mercury into the environment. Also, many small scale mining communities - including Gbane and Sherigu - have become major sites for prostitution, disease and narcotics consumption (Hilson and McQuilken 2014). In addition, these miners work under harsh and de-humanizing conditions exposing them to several diseases including respiratory ailments.

2.2 Institutional arrangements for governing Small Scale Mining in Ghana

Small scale mining, a labour intensive way of extracting minerals like gold, has been prevalent in Ghana for several decades. Its existence was initially associated with local people's resolve to be entrepreneurial. According to Hilson (2009), the message resonating in policy making circles at the time was that artisanal and small scale mining is populated by businessmen looking to „get rich quick“. Lately however, this thinking has changed and its prevalence is now being associated more with poverty than entrepreneurship (Hilson 2009).

Globally, Small scale mining is said to have employed between 11.5 and 13 million people directly (Hilson and Potter 2003) but in Ghana, estimates by Hilson and McQuilken (2014) suggests that about one million, one hundred people are directly employed with about four million, four hundred people indirectly depending on the activity as a livelihood. Out the people directly employed in Ghana by the activity, women constitute about 50 per cent of the workforce (Hilson 2001). The employment potential of the sector is so great that Hilson and Osei (2014) suggest that Small scale mining be used by governments to tackle issues of high unemployment in sub-Saharan Africa.

In Ghana, several laws have been promulgated and institutions established in the hope of regulating the minerals and mining sector. Fundamentally, Article 257 (6) of Ghana's Constitution vests every mineral, in its raw state or form, in Ghana in the President on behalf of, and in trust for the people of Ghana. This means that although one can own or have access to a piece of land, the minerals underneath it belong to the state of Ghana. Other legislation were made establishing institutions to help in managing mineral resources, key among them is the Minerals Commission.

2.2.1 The Minerals Commission (MC)

The Minerals Commission is a government agency established under Article 269 of Ghana's 1992 Constitution and The Minerals Commission Act 1993 (Act 450). The Commission is the main promotional and regulatory body for the minerals sector in Ghana. It is responsible for regulating and managing the utilization of the mineral resources of Ghana, and coordinating and implementing policies relating to mining. It also ensures compliance with Ghana's Mining and Mineral Laws and Regulation through effective monitoring (The Minerals Commission Act 1993).

The Commission is required by law to formulate recommendations of national policy for the exploration and exploitation of mineral resources with special reference to establishing national priorities having due regard to the national economy. It is responsible for advising the Minister of Lands and Natural Resources on matters relating to minerals. With regards monitoring, the Commission is mandated to monitor the implementation of laid down Government Policies on minerals and report to the Minister. It also was tasked to monitor the operations of all bodies or establishments with responsibility for minerals and report to the Minister (The Minerals Commission Act 1993).

The Minerals Commission was also given the mandate to secure a firm basis of comprehensive data collection on national mineral resources and the technologies of exploration and exploitation for national decision making. It was responsible for receiving and accessing public agreements relating to minerals and reporting to Parliament (The Minerals Commission Act 1993).

The Commission, in carrying out its core functions, investigates the backgrounds of applicants, process application for mineral rights and recommends the grant or otherwise to the Minister. It also reviews agreements relating to minerals; collect, collate and analyse data

on the operations of mining companies for decision making and for dissemination (The Minerals Commission Act 1993). It performs its functions by liaising with other governmental agencies, notably the Geological Survey Department (GSD) and the Environmental Protection Agency (EPA) to monitor and ensure adherence of mining companies to the terms and requirements of the mineral rights granted to them (The Minerals Commission 2010).

2.2.2 Enactments to support regularization of Small Scale Mining

Prior to 1989 small scale mining was outlawed in Ghana, and maybe the whole of subSaharan Africa, making it illegal for one to engage in the activity. During this period miners were criminalized, their machines and equipment confiscated and some of the miners sent to prison. However, while these miners were famously denounced as criminals, vandals, environmental polluters and self-harmers, it is appropriate to recognize that these miners did so to promote both their livelihoods and those of the communities that live alongside their operations (Tschakert and Singha 2007). The positions of governments in sub-Saharan Africa regarding small scale mining, however, began to change with time. Governments in the sub-region, and indeed the world, began to see the activity more from the livelihoods perspective. They then started taking steps towards incorporating the activity into the formal economy by way of legalization.

In Ghana, three laws were promulgated in 1989 in a drive to get small scale miners to formalize. These laws were; The Small scale Mining Law of 1989 (PNDCL 218), The Mercury Law (PNDCL 217) and The Precious Minerals Marketing Corporation Law (PNDCL 219).

The Small Scale Mining Law of 1989, (PNDCL 218), allowed for all small scale mining activities in Ghana to be registered. Miners were to go through a series of registration

procedures to obtain licenses to operate on parcels of land (concessions) allocated them. The law outlined the registration procedure, the conditions under which such licenses were to be given and some sanctions, in case of any breach. In addition, PNDC Law 218 mandated the Minerals Commission to create District Small scale Mining Centres for purposes of monitoring small scale gold mining operations within the catchment area of each Centre. The Centres were set up in seven different areas designated as small scale gold mining operation areas (Figure 2.1).

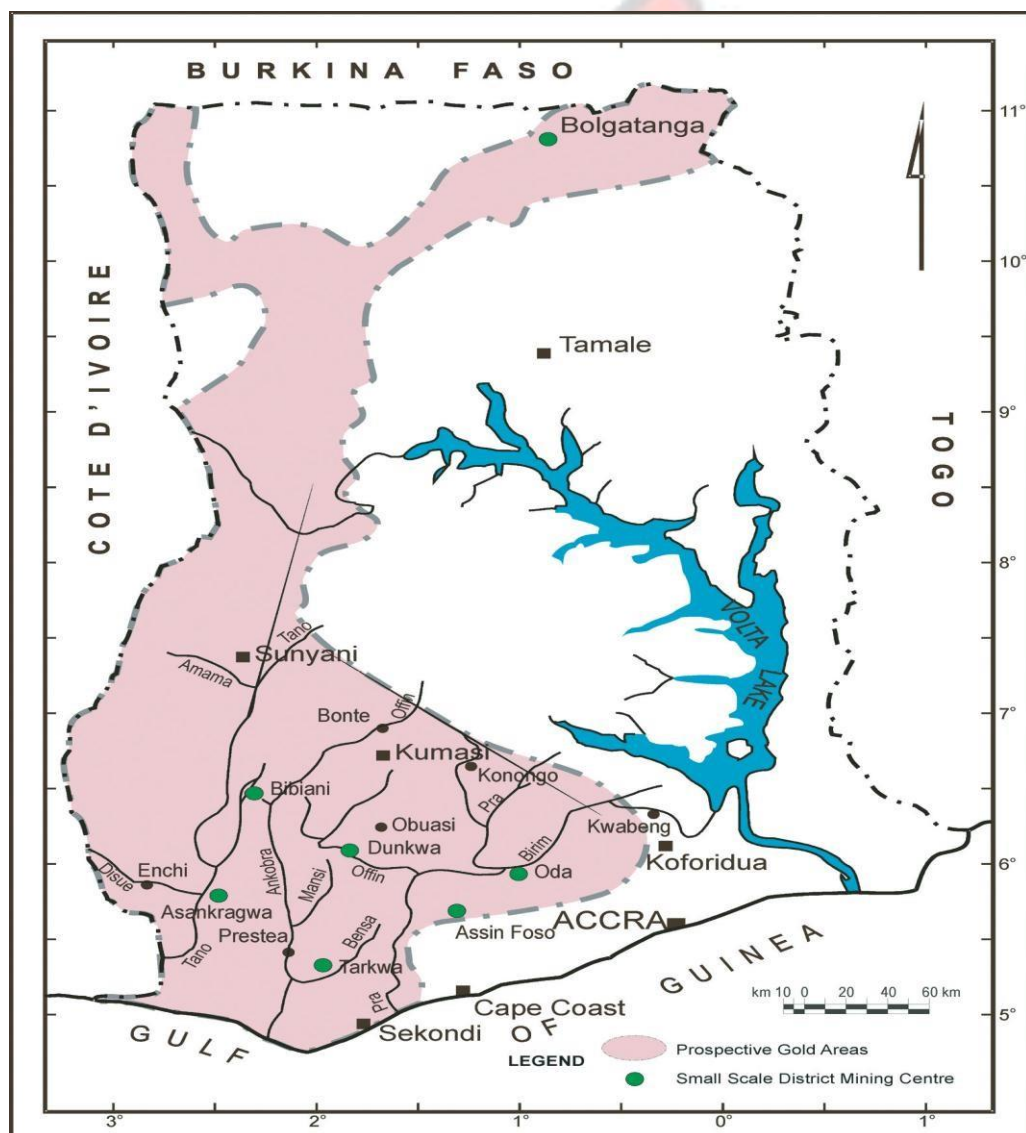


Figure 2.1: Map of Ghana showing all seven District Small Scale Gold Mining Centres

Each District Centre was tasked to compile a register of all small scale gold miners and prospective small scale gold miners specifying such particulars as may be determined by the Minister. The Centres were also to supervise and monitor the operation and activities of the small scale gold miners and prospective miners. They were equally mandated to advice and provide such training facilities and assistance as may be necessary for effective and efficient small scale gold mining operations. Each Centre was however tasked to perform its functions in respect of its designated area (PNDCL 218).

The Mercury Law (PNDCL 217) barred anybody from importing, possessing, buying and or selling any quantity of Mercury. It however allowed for persons who sought to deal in mercury to apply and be granted a license to deal in Mercury subject to the terms and conditions specified in the license. A license, once issued, could be revoked if the licensee breached any of the terms and conditions. By so doing, licensed mercury dealers were also brought into the small scale mining and processing chain. Dealers often supplied miners with mercury, which is added to the gold concentrate and mixed to form a gold amalgam. This was subsequently heated to separate the gold. PNDC Law 217 was enacted to help deal with issues of inappropriate and excessive use of mercury by small scale miners so as to reduce pollution, poisoning, exposure to health hazards and risks.

The Precious Minerals Marketing Corporation Law of 1989 (PNDCL 219), on its part, established the Precious Minerals Marketing Corporation to provide a market for small scale gold mined. Before the passage of these laws most small scale gold mined was smuggled out of Ghana through neighbouring Cote d'Ivoire and Guinea (Hilson 2002b). This law also permitted private gold dealers to register and be licensed to buy gold from the small scale miners. This, according to Amankwah and Anim-Sackey (2003), was an attempt to curb the

smuggling, create a competitive market and keep prices at market levels. Teschner (2012) deemed the permission of private dealers to buy gold a success, as gold in Tarkwa was being purchased at > 95% of the day's spot price. However, Teschner (2012) asserts that, the less intentioned, but not surprising consequence of allowing private gold buyers is that government's Precious Minerals Marketing Corporation (PMMC) was continually undercut by them.

2.2.3 Relevant Collaborating Institutions

The Environmental Protection Agency (EPA) ensured that prospective miners or licensees incorporated environmental protection issues into their operations so as to reduce the environmental impact. It is the body permitted by law to issue an Environmental Permit to the would-be license holder, indicating that his/her operations will have little or no adverse environmental impact. Without this permit, the application for a license will not be processed. The body was also tasked to conduct field monitoring visits periodically to assess the operations on the ground and could revoke or recommend the revocation of a mining license.

The Metropolitan/Municipal/District Assembly within which the applicant for a license wishes to mine was also an important institution worth mentioning. By law, PNDC Law 218, there shall be established in every designated area a Small scale Gold Mining Committee chaired by the political head of the area (Chief Executive Officer). The Assembly is responsible for planning the area and designating areas for particular activities and purposes. It also worked hand-in-hand with the District Small scale Mining Centre to process license applications and monitor the activities of miners. In addition, this body was responsible for the direct implementation of central government's policies and programmes within the district/municipality/metropolis (Minerals Commission 2010).

Lastly, traditional authorities in Ghana are believed to be the custodians of our culture and traditions. In some parts of Ghana they held in trust the lands within their jurisdiction for their subjects. They were therefore key actors to consider in regulating small scale mining, although not mentioned in the law. They played a vital role in leasing out lands for small scale mining as well as acted as liaisons in compensation payments (Personal Communication, Okyere 2015).

2.3 Potential Challenges to regularizing unregistered small scale mining in Ghana

Small scale mining has been endemic in some rural communities, well before the arrival of large foreign mining companies, despite the adverse impacts associated with such mining activities (Banchirigah 2008). Upon realizing the potential positive contribution of the activity and sector to national economies, several countries, Ghana inclusive, began to take initiatives aimed at bringing the activity into the formal economy. These regularization initiatives, however, have been faced with several difficulties and appear to be failing or ineffective in addressing the sector's issues (Hilson and Potter 2003; Banchirigah 2008).

In Ghana, attempts to regularize small scale mining began in 1989 following the enactment of the Small scale Gold Mining Law (PNDC Law 218). Similar to what pertains in other countries in sub-Saharan Africa, Ghana's initiatives to get small scale mining activities formalized are challenged by a multiplicity of factors. Regularization, in terms of small scale mining, is a process by which a miner acquires a license to mine a mineral on an assigned piece of land called concession. It involves a series of steps as outlined in PNDC Law 218 and Minerals Commission (2010). It is assumed that regularizing small scale mining would bring a number of benefits to the State and miners. For instance, regularizing small scale mining guarantees miners full property rights. These full formal titles would create incentives for investments and development of the resource. It also allows access to credit

and transformation of the resource into standardized instruments of exchange and capital (Geenen 2012). According to Siegel and Veiga (2009), formal titles are the basis of a miner's access to legal redress when rights are violated and give them

„voice“ in decision making processes (Hilson and Potter 2005). Furthermore, it is opined by Geenen (2012) that, when titles are formalized, owners would also respect other people's titles; physical and human security in general would be enhanced. With all the benefits associated with regularizing their activities, research has shown that miners have little motivation to do so; the question is why?

2.3.1 Mistrust over Government's Intentions

Generally, there is deep-seated mistrust between the major stakeholders in the small scale discourse; notable among them is the mistrust miners have about Government's quest to get them formalized. While some argue that attempts to bring small scale miners into the formal system are aimed at giving them (miners) more tenure security and property rights (Geenen 2012), others say such attempts are aimed at reducing the negative environmental impacts (Aryee *et al.* 2003). However, the major actors in the regularization process, Government and Small scale miners, have their various reasons or perceptions about the whole process. Miners on their part generally viewed the attempts and process with suspicion and skepticism. They see these strategies as ways of taking away, what otherwise belongs to them and handing over same to foreigners. These foreigners and their interests rob miners of employment. This perception is in consonance with findings by Maconachie and Hilson (2011). For example, Maconachie and Hilson (2011) assert that formalization strategies continue to be concerned with creating a legislative framework, licensing, and tracking artisanal mining in order to capture revenue for the government, rather than addressing the

livelihood demands and welfare issues of those enduring poor working conditions, low pay and job insecurity.

Again, Hilson and Potter (2005) and Banchirigah (2008) observed that in Ghana the legalization of small scale gold mining has been an integral component of government's strategy to promote foreign investment in large scale mining and mineral exploration, since control over who can register as small scale miners and where they can operate puts authorities in a better position to demarcate concessions to gold exploration and mining companies. This lends credence to perceptions that, when the state takes tighter control over the informal sector, more powerful actors are likely to benefit (Geenen 2012). According to Platteau (2000) cited in Geenen (2012), formal titling risks to reinforce inequalities, and benefit the rich and middle class rather than the poor Gilbert (2002) cited in Geenen (2012). It is also the view of Geenen (2012) that, formalization would better favour the „strongest“ actors and grant them more power in their rights. Unlike artisanal miners and other small scale actors, whose property rights are generally grounded in customary law, more powerful and richer actors will find it easier to have their property rights rooted in official law. Government of Ghana's mineral and mining policies have always aimed at creating a more attractive investment climate for large scale companies (Banchirigah 2006; 2008). As such, small scale miners see regularization initiatives as ways by which government seeks to identify them, tax them out of business, deny them their livelihoods and eventually curtail their rights.

Another issue fuelling this mistrust and negative perception about government's intent to get them regularized is the bad image, reportage, stereotype associated with small scale mining, created by government. Small scale miners have been described in several circles, including political discourse by successive governments, as being irresponsible, criminals and as people who have no regard for protecting the environment (Tschakert and Singha

2007). They are stereotyped „inter alia“ as „security risks“ and „threats to live and property“ Ghana Chamber of Mines (2007) cited in Childs (2008). How then can miners, who have been criminalized and condemned by government, turn around to trust that government has their welfare at heart? It is the view of this study that governments begin to consider the suggestions of Tschakert and Singha (2007) that, deconstructing the dominant „antigalamsey discourse“ and giving such miners “a place at the table” by challenging the unequal power relations found in the rhetoric is, from a political ecology perspective, an essential starting point.

2.3.2 Inappropriate strategies

Another challenge is the issue of the inappropriateness of the strategies adopted by the Government. Formalization strategies by governments seem to make assumptions which do not meet the socio-economic and cultural needs (Geenen 2012), aspirations of miners and communities. Decisions are often top-down in nature (Hilson and Potter 2003), which almost always do not work. Policies often do not agree with the standards set by the rhetoric and are carved to satisfy the interests of government instead of pursuing the larger objective of improving the livelihoods and welfare of miners. This has the potency of provoking rebellion on the part of the marginalized miners. Hilson and Potter (2005) argue that many artisanal miners are keen on acquiring a license, if only because they fear to be prosecuted. The problem, according to them, is not the unwillingness of miners but rather the perception that policy measures are inappropriate to their situations. Policy measures are often either too technical or narrow or both, and neglect broader, more complex socioeconomic and political issues (Geenen 2012). This argument was confirmed by CASM (2007 cited in Childs 2008) who found out that most previous efforts to address challenges confronting artisanal miners and their communities have focused on technical rather than on socio-cultural and poverty aspects of their situation. This, according to CASM (2007), is predicated on the belief that

“a trend towards more sophisticated technologies” Mutemeri and Petersen (2002) would reduce environmental and human health impacts, and improve efficiency in the extraction process. However, the technical „solutions“ that have been put forward have either not worked or have proven unpopular with target communities (Mutemeri and Petersen 2002).

2.3.3 Academic and Technical nature of formalization procedure

Most strategies to get miners regularized are academic and technical (Hilson and Potter 2003), hence skewed towards people with the benefit of formal education. But most miners have very little education or none at all therefore are marginalized in a way. For example the procedure for acquiring a license in Ghana includes filling/completing ten copies of the Small Scale Mining License application form among other things (Hilson and Potter 2003; Minerals Commission 2010).

2.3.4 Bureaucracy in formalization procedure

Bureaucracy is yet another challenge preventing miners from being registered. In Ghana, a potential licensee must obtain application forms from the District Small scale Gold Mining Centre, in whose jurisdiction the miner intends to mine. The applicant is required to fill the forms and submit them to the District Centre under which the proposed area for mining activity is located. This is followed by an inspection of the area and a report submitted to the Chief Executive Officer of the political district. Miners are also required to obtain an environmental permit from the Environmental Protection Agency (EPA); this can take a month or more to obtain (Aryee *et al.* 2003). In addition, a miner is required to sign an agreement in Accra with the sector Minister in the final stages of processing an application before the license is finally issued. According to Hilson and Potter (2003), miners usually ask for an extension of 5 years for license because of the delay in obtaining the license; they even suggest the process be decentralized to make it faster.

The process of registering and obtaining license is complex and bureaucratic, sometimes lasting over a year. Hilson and Potter (2003) and Banchirigah (2008), have argued, that this has been a major disincentive for miner's registration. According to Jennings (1999), certain governments have introduced complicated licensing and registration schemes for artisanal and small scale miners, in which case there is minimal incentive for operators to conform to regulations, particularly when the risks of being caught and sanctions applied are minimal. When the process has bureaucratic complexities, inefficiencies and the labour, time and costs are high, miners may be dissuaded from considering regularizing their operations (Hilson and Potter 2003).

2.3.5 High cost of obtaining a license

The issue of cost for processing formalization applications is another factor that inhibits operators from legalizing their activities. In Ghana, the process of acquiring a license requires the payment of fees. These are sometimes accompanied by extortions from government officials, in form of bribes, making the process expensive. According to Geenen (2012), formalization is a process, not a product, and even the most elaborate policies to formalize mining activities fail if government lacks the will to implement plans, if miners perceive licensing as a threat, or if miners cannot afford the costs of joining the legal economy.

The cost of a license and the initial investment in mining are so high that miners wonder if it is worth going for such license; for they fear that they may not recover their investment since little is known about the amount of gold contained in the land. Banchirigah (2008) discovered that it cost a pit owner about USD 6,666 to engage employees for 19 weeks to construct a mine site in Noyem in the Eastern Region of Ghana, excluding expenditure on supplies, materials and equipment. However it is usually difficult for miners to estimate their

expected returns as little prospecting is done usually prior to commencement of operations, hence reducing the motivation to take on additional costs leading to an acceptance of their unregistered status.

2.3.6 Perceived corruption in obtaining land and license

In the small scale mining sector, one factor reducing the motivation of operators to regularize is the perceived unlawful arrangements between miners and influential people in the community or government circles. These arrangements give miners some social licenses to operate whiles influential collaborators gain from royalty payments. The formalization discourse assumes that everyone will eventually benefit from strong property rights (Geenen 2012). Yet it has been argued that artisanal and small scale miners do not necessarily want strong and formal property rights. They may not think of their „illegal“ status as a problem, as long as they have „perceived“ tenure security Gilbert (2002) cited in Geenen (2012). For example, despite their lack of formal titles they may have customary titles, which are perceived as strong, and even more legitimate. The unlawful arrangements take different forms; for instance Banchirigah (2008) found out that some mine pit owners bought street light bulbs for the community where operations were being carried out as well as paid 35,000 Cedis (now GH¢ 3.50) daily to the Unit Committee Chairman. Though these are unofficial arrangements, miners gain their legitimacy to operate from them as such have little motivation to regularize as long as such arrangements last.

Van Bockstael (2014) also argues that many artisanal miners are operating at various stages of legality, through the payment of informal taxes, and based upon informal agreements with local government officials. These informal practices can be considered coping strategies in environments governed by an inflexible legal framework that is not in tune with local realities. According to Van Bockstael (2014), these locally based „formalisation“, benefit

both cash-strapped artisanal miners unable to pay the full fees required by the Mining Code, as well as underpaid government officials who use these opportunities to supplement their incomes. He concludes that while only a few number of miners deliberately mine illegally, most still lack the necessary legal paperwork and are therefore classified as illegal. In reality, however, many miners operate in the gray zone between legal and illegal status, a space where miners, customary authorities, and government representatives are engaged in constant negotiation over governance of artisanal mining activities.

2.3.7 Ineffectiveness of State Institutions

The establishment of under-resourced and weak institutions has also been a factor that prevents miners from regularizing their illegal activities. The capacity of such institutions to effectively perform their duties is often worsened with under-staffing and over-reliance on donor funding. Mining officials are limited by the lack of resources at their disposal, strongly interfering with their ability to conduct their professional duties. For example, mining officials have been known to use motorbikes of illegal miners on their patrol (Van Bockstael 2014). In Ghana, the Minerals Commission and its District Small scale Mining Centres, mandated by law to formulate policy and regulate the minerals and mining sector, equally face the challenge of being under-resourced. In a study by Hilson and Potter (2003), it was realized that the District Centres lacked internet and intranet capabilities, and that most were equipped with basic typewriters. Thus a request to head office from a District Centre staff for a list of registered miners, or the details of a concession – a task that would normally take minutes via email communication – takes weeks, if not, months. However, this study observed during a visit to the Bolgatanga office that it was equipped with a desktop computer and internet connectivity. The District Officer was also seen using a laptop computer but the study could not verify if it was supplied by the Minerals Commission or

from personal funds. On this basis, the study can confirm that the situation has improved at the moment.

Due to the weak nature of some of these regulatory and enforcement institutions (Van Bockstael 2014), some staff resort to corrupt practices either to enable them raise resources to operate their institutions or satisfy their interests. Van Bockstael (2014) corroborates this thinking when he asserts that a significant proportion of unlicensed artisanal miners have at some point entered into an informal agreement with local mining officials, giving them at least tacit approval to commence or continue mining. Such practices not only provide an alternative to paying for a license upfront but also shield miners from incurring great losses if a claim or concession turns out to be uneconomical. Teschner (2012) also suggests that law enforcement corruption and the involvement of some influential government officials or politicians, have contributed in no mean way to further weaken the ability of institutions to enforce the law.

2.3.8 Lack of support for Small Scale Miners

Lack of support for small scale mining reduces the willingness on the part of illegal miners to get regularized. Because miners have to rely on informal sources, like gold buyers and middlemen, for funding they are sometimes cheated by the latter and therefore continue to work and live in poverty (Banchirigah 2008; Hilson and Ackah-Baidoo 2011; Hilson and McQuilken 2014). As such these miners most times cannot afford to pay the fees for acquiring licenses and have to work with their illegal status. But according to Hilson and Potter (2003), there is consensus on the ground that the resulting shortage of institutional support has been a major disincentive to registering operations, as many artisanal miners now feel that the quantity of institutional assistance does not justify the costs and frustration associated with securing a license.

Small scale mining generally has very high technical and financial risks; funding the operations is hence difficult and expensive. People operating in the small scale sector lack technical and managerial skills. Any upgrading of the operations therefore must be accompanied by training (Hilson and McQuilken 2014). Per PNDC Law 218, registered miners are to be given some capacity building; have their activities monitored to conform to certain environmental standards. On the contrary, these miners hardly get any training owing to the under-resourced nature of the institutions responsible. The result is that only few gold miners operating on artisanal and small scale basis adhere to governmental regulations.

2.3.9 Continuous availability of market for gold

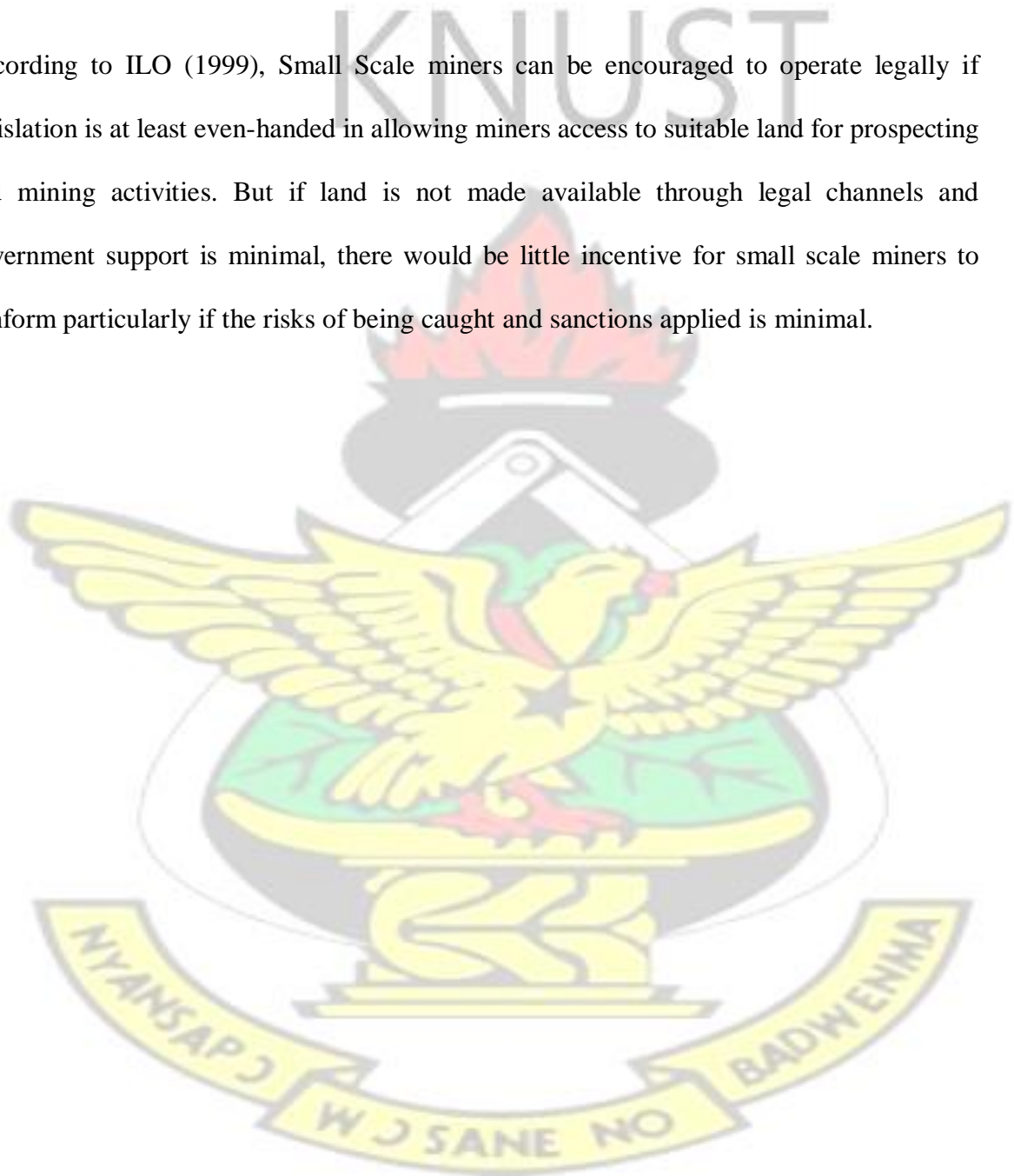
The prevalence of a continued demand or market for gold mined by illegal operators poses another big challenge to the drive to get illegal operators regularized. The Precious Minerals Marketing Corporation was established in 1989 to buy gold from the small scale sector, particularly registered operators. According to Hilson and Potter (2003) the Corporation employs about 700 licensed buying agents. Though originally mandated to buy products of registered small scale miners, the Corporation does not discriminate between gold from legal and illegal miners (Hilson and Potter 2003; Teschner 2012).

Again, the thriving „black market“ for dealing in gold and other minerals serves as an alternative market for illegal miners. They are therefore not motivated to regularize knowing that their produce would be sold, anyway, be it through the black market or otherwise.

In conclusion, Hilson (2009) opines that, the official registration of mining activities and titles has been considered to be a sufficient condition for addressing the problems relating to artisanal and small scale mining. But despite efforts made by the Ghanaian Government it has largely failed to prevent the expansion of illegal artisanal mining (Banchirigah 2008). The problem with these measures is that they are extremely bureaucratic, inappropriate and

incompatible with existing realities (Hilson 2009) and there is often a lengthy waiting period for application decisions (Hilson and Potter 2005). As a result, more sites are developing in areas without a history of artisanal and small scale mining as gold prices increase (Banchirigah 2008).

According to ILO (1999), Small Scale miners can be encouraged to operate legally if legislation is at least even-handed in allowing miners access to suitable land for prospecting and mining activities. But if land is not made available through legal channels and government support is minimal, there would be little incentive for small scale miners to conform particularly if the risks of being caught and sanctions applied is minimal.



CHAPTER THREE

METHODOLOGY

3.1 Study Area

This study was conducted in two rural communities, Gbane and Sherigu (Figure 3.1), in the Upper East Region of Ghana. Agriculture is vital to meeting livelihood needs of people in these two areas, and it employs several people within the working force. According to UNDP (2012), “poverty is so endemic in the three northern regions of Ghana that it would be difficult to reduce extreme poverty by half in these regions by 2015”. UNDP (2012) adds that “while the poverty situation in Northern Region seems to be mild, the situation in the Upper East and West Regions is high”.

Between 2005 and 2006, extreme poverty in Ghana stood at 18.2% (UNDP 2012). In an attempt to escape poverty, an increasing number of Ghanaians have been migrating to rural areas where many are turning to artisanal and small scale gold mining (Hilson and Potter 2003). Davidson (1993) also asserts that, “in diverse areas of the world, artisanal mining has become the principal livelihood for millions of miners and their families and the mainstay of rural economies”. This is the case in Gbane and Sherigu, where small scale gold mining appears to have become a safe haven for poverty-stricken people. Informal communication with the District Officer of the Minerals Commission, (Personal communication, Okyere 2015) revealed that, small scale gold mining in these two areas began in 1995.

These two communities have experienced illegal small scale mining activities for so long that miners were more likely to understand issues relating to regularization than any other. This informed the choice of Gbane and Sherigu for the study.

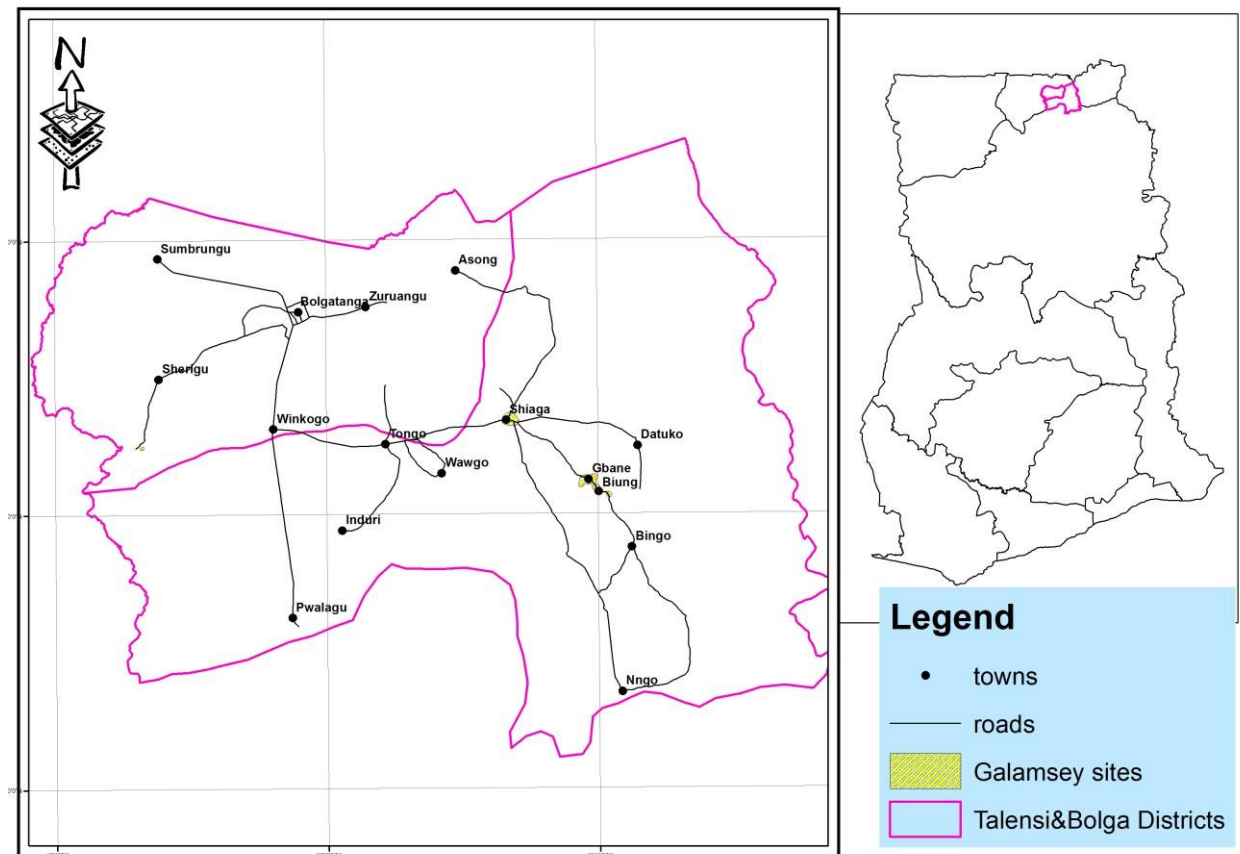


Figure 3.1: Map showing locations of Gbane and Sherigu

3.1.1 Gbane

Gbane is located in the Talensi District on latitude 10.68°N and longitude 0.67°W. The Talensi District was carved out of the Talensi – Nabdam District in 2012 and has a population of 81,194 (Ghana Statistical Service 2010). Gbane is found in the eastern part of the District, about 40km from Tongo, the District capital. The topography is dominated by relatively undulating lowlands with some isolated outcrops and some uplands slope at the Tongo areas. It falls within the Birimian, Tarkwaian and Voltarian rocks of Ghana with evidence of the presence of minerals especially gold.

Agriculture plays a vital role in the socioeconomic development of the people. It contributes to ensuring food security, provides employment and incomes for most people.

The main crops cultivated are maize, millet, sorghum, rice and leafy vegetables. Small

scale gold mining in Gbane is predominantly unregistered, and carried out on open arable lands in four sites; Obuasi, Kejetia, Tarkwa and Accra.

3.1.2 Sherigu

Sherigu is a farming community located in the Bolgatanga Municipality on latitude 10.71°N and longitude 0.95°W. It is about 12km, south-west, from Bolgatanga, the municipal capital. The population of the municipality stood at 131,550 as of 2010 (Ghana Statistical Service 2010).

Sherigu, and the whole municipality, has gentle slopes with some outcrops and some uplands. It falls within the Birimian, Tarkwaian and Voltarian rock formations. There is ample evidence of the presence of minerals, especially gold. In Sherigu, small scale gold mining activities are carried out in a forest reserve that stretches to Naaga, in the Kassena Nankana Municipality. Most miners who work in Sherigu also operate in Naaga and Kadema in the Bulsa North District.

3.2 Research Design

Creswell (2003) defines research design as the plan or proposal to conduct research. It enables the researcher design solutions to problems and guides the various stages of the research. This study sought to understand the illegal small scale gold mining situations in Gbane and Sherigu in the Upper East Region of Ghana, and also explore the factors that prevent miners from regularizing their operations.

A case study strategy was adopted for this study. Case study, according to Yin (2003), is an empirical inquiry which focuses on a contemporary phenomenon within the real-life context using multiple sources of evidence. This approach enabled close collaboration between the researcher and the research participants, and allowed participants recount their stories.

Through these stories, the participants described their views of reality and this enabled the researcher to better understand the actions and activities of the research participants. The study used Focus Group Discussions, Key Informant Interviews, Direct Observation, and a Formal Survey with a close-ended questionnaire to collect data from respondent mine pit owners. The study relied mainly on mine pit owners in both communities and the District Officer of the Minerals Commission for information. Since it was difficult to identify mine pit owners, the study used key informants to identify the first mine pit owner in each community who in turn referred the researcher to others. Therefore, snowball sampling method was used. Informal interviews were used to obtain information from the District Officer regarding the general small scale mining situation in the region. The informal interviews took the form of discussions using a checklist, which was unstructured. In all 40 respondents mine pit owners were interviewed using a questionnaire, 4 key informants were contacted and 14 mine pit owners participated in Focus Group Discussions in both Gbane and Sherigu.

3.3 Sampling Technique and Selection of Respondents

Respondents in this study were selected using a non-probability sampling technique. The subject matter researched into had to do with why illegal small scale miners in Gbane and Sherigu operate without licenses, when the opportunity for regularization exists. Subjects to this study were „hidden“ and hard-to-reach. This meant no sampling frame existed, so the size and boundaries of the population were unknown, and there were also strong privacy concerns (Heckathorn 1997). The study adopted the snowball sampling technique for identifying respondents. This method is suited for a number of research purposes and is particularly applicable when the focus of study is on a sensitive issue, possibly concerning a relatively private matter, and thus requires the knowledge of insiders to locate potential respondents for the study.

The study also used Key Informants to identify the target population; mine pit owners, as well as interview knowledgeable people on the subject matter.

3.4 Data Collection Methods

Case study employs a wide range of data collection techniques including observation, interview and documentary analysis based on factors such as what people do privately or publicly and also what their thoughts and beliefs are (Robson 2002). Data was collected using Focus Group Discussions, Direct Observation, face-to-face interviews and review of documents. Data collection was conducted over a two week period, one week in each community, from January 19, 2015 to February 4, 2015. However, some key informant interviews with the District Officer of the Minerals Commission in Bolgatanga started as far back as January 9, 2015.

Data collection was preceded by a pretest of the data collection instruments conducted in Gbane and Sherigu in December 2014. The questionnaires were administered to some mine pit owners in both communities. This enabled the researcher revise the questionnaire used for the face-to-face interviews to suit the understanding of respondents.

During data collection, one Focus Group session was conducted in each community with; 8 mine pit owners in the case of Gbane and 6 mine pit owners in Sherigu. Each session lasted between 35 and 50 minutes. The Focus Group Discussions enabled an in-depth understanding of issues regarding why people engage in small scale mining, problems with acquiring licenses and how land was acquired for small scale mining activities amongst other things. The factors mentioned were then ranked using pair-wise ranking to determine, for each community, the most pressing factor that prevents miners from regularizing their activities. Data collected through Focus Group Discussions were used to triangulate data collected during the formal survey. Interactions, during the focus group sessions, were

carefully planned, conducted in a permissive, non-threatening environment and were facilitated by the researcher.

The Focus Group Discussions were followed by personal, face-to-face interviews with respondent mine pit owners using a structured questionnaire. The questionnaires (Appendix I) had mainly close-ended with some open-ended questions to direct respondents to provide their own answers. Information was sought on; i) miners' perceptions about regularization and factors that prevented them from regularizing; ii) process of land acquisition for their activities; iii) regularization requirements being met by miners presently and the forms of regularization with which miners were operating; and iv) how to encourage miners to regularize their small scale activities. In addition, socioeconomic data on age, sex, education and number of years spent in school, employment prior to start of mining and whether miners still worked in that capacity and the number of dependents of the respondents.

Using the questionnaires, 40 mine owners (30 in Gbane and 10 in Sherigu), all male, were interviewed. Direct observation was done concurrent with questionnaire administration. Information on the roles of women in mining areas, and mercury handling were all obtained through structured observations. The study recorded observations based on carefully predefined criteria like; differences in gender roles, how miners handled mercury and the state of degraded land in Gbane and Sherigu resulting from small scale activities.

Key informants also provided information regarding how land for illegal mining was acquired, process of license acquisition and potential problems, and cost details for acquiring a license. Key informants in this study included the District Officer of the Minerals Commission, two mine owners who doubled as sponsors and gold buyers, and a stone grinding mill operator in Gbane.

3.5 Ethical considerations

Research may directly or indirectly harm people's lives and relationships through unwanted publicity and influence hence the need for ethical considerations. Research ethics, according to Bryman (2012), ensures that the principles of justice, respect and avoidance of harm are upheld by using agreed standards. This study was based on the Free Prior Improved Consent (FPIC) principles for doing research. All participants were verbally informed of the study's purpose, assured that their responses would be used solely for the study, as such would be kept confidential, and that they the participants would remain anonymous. Having understood what was required of them, respondents were then asked to freely consent to participate in the study or otherwise. All participants agreed to participate and subsequently indicated on the questionnaire (Appendix I) by way of ticking the "yes" option.

3.6 Statistical Analysis

Data collected using questionnaire was entered into a template prepared using Statistical Package for Social Sciences (SPSS) version 16 software. This software has a statistical base that offers a wide range of statistical tools for basic analyses like counts, crosstabs and descriptive statistics. Data collected was subjected to descriptive statistical analysis and presented as frequencies, tables, and graphs.

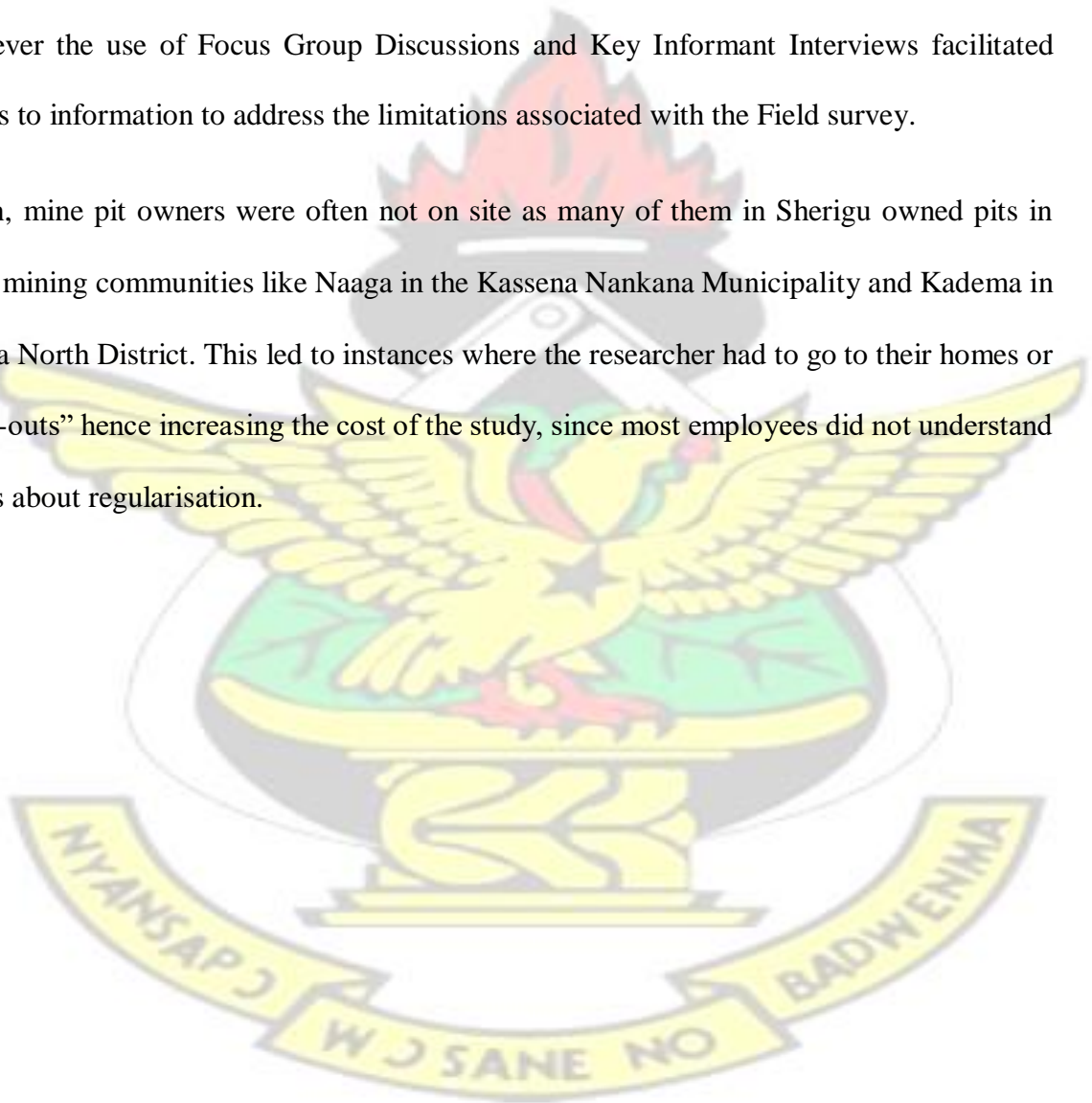
Data collected during focus group discussions and from key informants were put into themes, analysed and presented in frequencies, tables and graphs. Pairwise ranking was used to rank factors that prevent miners from regularizing. Analysed data was transferred to Microsoft Excel software to create visuals to illustrate key findings presented in the text. Socio-economic characteristics of miners were analysed in relation to their perceptions about regularization, factors that prevent them from regularizing, and ability to go through license

application process. Data was also analysed in relation to conclusions and propositions of other researches.

3.7 Limitations of the study

Knowing the kind of activities miners were engaged in and owing to the numerous security official-led sweeps in the past, miners were skeptical about participating in the study. This is the reason for which only 40 mine pit owners were interviewed using questionnaire. However the use of Focus Group Discussions and Key Informant Interviews facilitated access to information to address the limitations associated with the Field survey.

Again, mine pit owners were often not on site as many of them in Sherigu owned pits in other mining communities like Naaga in the Kassena Nankana Municipality and Kadema in Builsa North District. This led to instances where the researcher had to go to their homes or “hide-outs” hence increasing the cost of the study, since most employees did not understand issues about regularisation.



CHAPTER FOUR

RESULTS

4.1 Socio-economic characteristics of respondents

Small scale mining in Gbane and Sherigu employs both males and females. Contrary to claims of it being unorganized, the study observed that the sector is highly organized with a highly structured form of division of labour. The strenuous and highly risky aspects of the sector's activities like underground digging and crushing of gold bearing-rocks is handled by males. Although small scale mining is known to have employed many women, these female employees were often engaged in relatively easier, less stressful jobs like carrying ore to the mills, washing grounded ore, before the application of mercury to obtain the amalgam (Plates 4.1a and 4.1b).



Plate 4.1a



Plate 4.1b

Plates 4.1 (A and B) Female employees engaged in washing ore and fetching water in Gbane

Many women were also employed to carryout support services such as fetching water and washing the clothes of miners. The study revealed that ownership of mine pits was the preserve of the men, in Gbane and Sherigu, since all mine pit owners interviewed were males.

On the issue of where miners hailed from, the study discovered that 45% of the 40 pit owners surveyed were indigenes of the two communities and 55% originated from outside Gbane and Sherigu (Table 4.1).

Table 4.1 Places from where miners migrated

Origin of migrants	Number of respondents	Percent
Nearby Community but within district	13	32.5
Outside the district	6	15.0
Outside Region	3	7.5
Total	22	55.0

Source: Field survey (2015)

The minimum age of respondent miners was 20 years while 56 years was the age of the oldest respondent. On the average, a respondent miner was about 39 years old. The education level of respondent mine pit owners ranged from those who had no formal education at all to others who had tertiary education (Figure 4.1). As such the minimum number of years spent in school was zero and the maximum being 15 years. The average number of years spent in school by a miner was approximately seven, enough to complete Primary six.

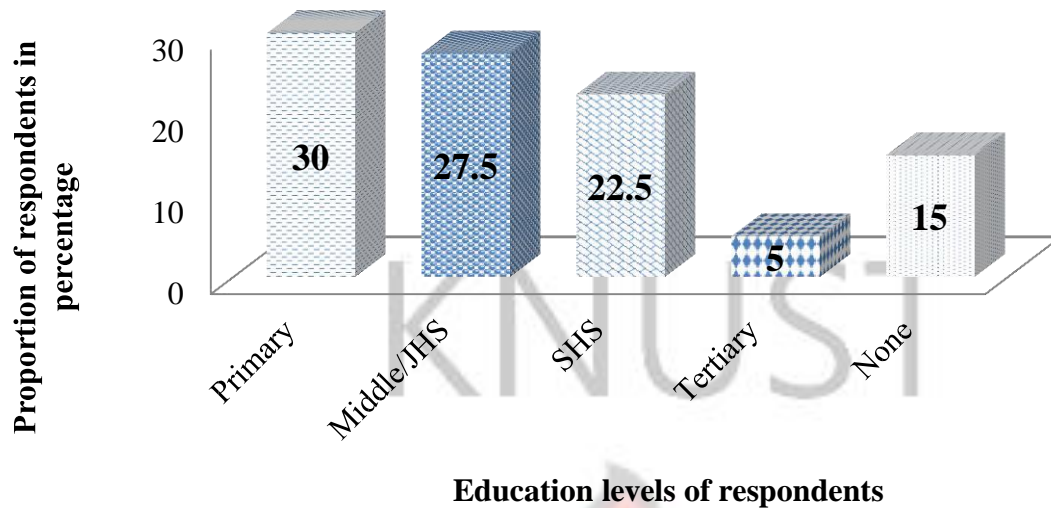


Figure: 4.1 Levels of Education of Miners

Generally, most miners, 85% of respondents, were engaged in some form of livelihood activity prior to their start of small scale mining, although a few were unemployed. Miners were employed in agriculture, petty trading/ craftsmanship, government sector and others engaged in roasting meat and private driving (Figure 4.2).

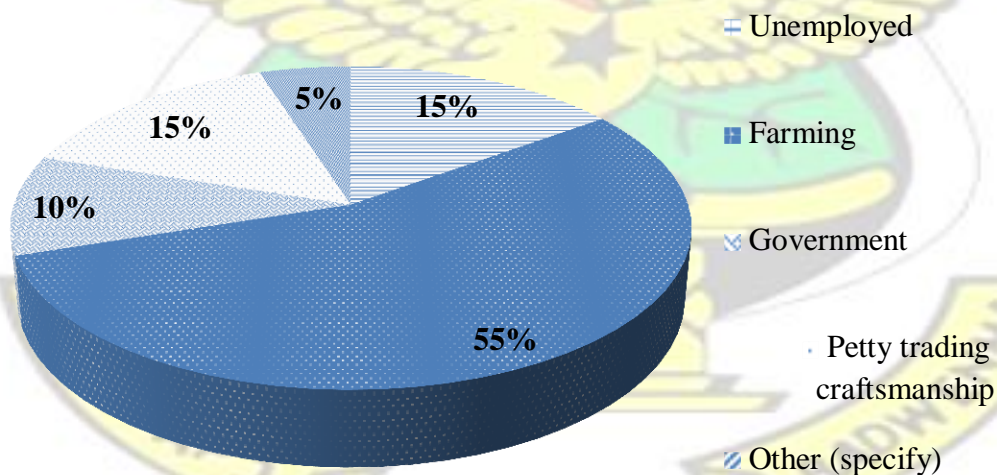


Figure: 4.2 Employment of Respondents Prior to Mining

However, 60% of respondents were still engaged in the livelihood activities they were engaged in prior to the start of mining at the time of the study, while 40% were no longer

engaged owing to factors such as bankruptcy and retrenchment amongst other reasons (Table 4.2). Miners had a minimum of four people to cater for and a maximum of thirty from their small scale mining earnings. The average number of people who depended on a miner was nine.

Table 4.2 Reasons for Abandoning Previous Employment

Reasons	Number of respondents
Retrenched	4
Gone Bankrupt	4
Other (specify)	8
Total	16

Source: Field survey (2015)

4.2 Factors that prevent miners from regularizing Small scale mining

The study sought to understand why miners in Gbane and Sherigu still operated without licenses and to identify the factors that prevented miners from actually formalizing their small scale activities. It sought to achieve this by assessing: miners' knowledge of the availability of the option to regularize; miners' knowledge of the institution to contact first in seeking a license and where to locate that institution; miners' perceptions about regularizing their activities; and finally to identify the factors that prevented miners from acquiring the required permits to operate. Although 97.5% of miners knew they were permitted by law to register and obtain permits to operate, and 92.5% of miners perceived regularization as being beneficial to miners, only 10% of respondents had started the process to obtain a license at the time of the study.

4.2.1 Knowledge of availability of regularization option

Miners in Gbane and Sherigu have been in the activity of small scale mining for between three and twenty years, with an average of almost ten years in mining. As a result, most of

them had a good understanding of the issues of the sector. For example, 67.5% of respondents in Gbane and Sherigu knew that the District Centre of the Minerals Commission is the first point of contact in trying to acquire a license. More miners in Gbane were aware of the first institution to contact than those in Sherigu (Table 4.3). However, 57.5% of respondents did know of the existence of the District Centre of the Minerals Commission in Bolgatanga, the Upper East Regional capital.

Table 4.3 Miners' Knowledge of Who to Contact In Seeking a License

<u>Knowledge</u>	<u>Gbane</u>	<u>Sherigu</u>	<u>Total</u>
Yes	23	4	6
No	7		13
Total	30	10	40

Source: Field survey (2015)

Mine pit owners generally knew that the possibility of regularizing small scale mining in Ghana was available (Table 4.4).

Table 4.4 Knowledge of Availability of Regularization Option

<u>Knowledge</u>	<u>Number of respondents</u>	<u>Percent</u>
Yes	39	97.5
No	1	2.5
Total	40	100.0

Source: Field survey (2015)

Data gathered during focus group discussions with miners in both communities indicate that most miners were aware they could regularize their activities by acquiring licenses. However, only 10% had actually started the process and were at various stages of the regularization (Table 4.5).

Table 4.5 Proportion of Respondents Who Had Started Regularization Process

<u>Status</u>	<u>Number of respondents</u>	<u>Percent</u>
Started	4	10.0

Not started	36	90.0
Total	40	100.0

Source: Field survey (2015)

Miners who had started the process to regularize were at various stages of the process (Table 4.6).

Table 4.6 Stages in Regularization Process Reached By Respondent Miners

Stage reached	Number of respondents	Percent
Submission of license application	1	2.5
Obtaining EPA Permit	2	5.0
Offer Letter / Payment of stipulated fees	1	2.5
Total	4	10.0

Source: Field survey (2015)

4.2.2 Perception about regularizing Small scale mining

Considering that 97.5% of miners surveyed knew they were allowed to regularize, the study sought to assess their perception on regularizing small scale mining. Results showed that 92.5% of these respondents felt regularization would benefit small scale miners, 2.5% thought that only government would benefit and another 2.5% felt it would benefit both miners and government. Even miner pit owners who did not know of the availability of a regularization option agreed that it will actually be beneficial to miners. A chi- square test showed that miners' perceptions on regularization significantly influenced them to regularize.

4.2.3 Factors that affect regularization of small scale mining

Although most miners interviewed knew they could register and obtain licenses to operate; only 10% had started the process at the time of the study. This suggests there were some other issues that affected their resolve to regularize, not just the availability of an opportunity

to regularize. The study found out that High costs, Bureaucracy/lengthy waiting periods, No incentives or support among others prevented miners from regularising. The factors identified during personal interviews with miners were similar to those found during focus group discussions. In ranking all factors identified, the study revealed that high costs of license, bureaucracy/lengthy waiting periods, lack of incentives/support and also lack of mineral rich lands affected miners resolve to obtain licenses most. The issue of lack of mineral rich land was limited to miners in Sherigu. Even though Exploration license in respect of the forest reserve and some arable lands in Sherigu had been issued to Union Mining Company, no allocation had been made for small scale miners.

A pairwise ranking done during focus group discussions showed that in Gbane, high costs of license was the most limiting factor, followed by the lack of incentives/support to miners and bureaucracy respectively. Difficulty in completing application forms and process was also identified and ranked over mistrust about government's intentions for wanting miners registered. However, lack of mineral rich land was not considered a serious problem in Gbane, since about 72 square kilometers of land had been explored and reserved for small scale mining activities (Table 4.7).

Table 4.7 Pair-wise ranking of factors that affect regularization of miners in Gbane

Factors that affect regularization		1	2	3	4	5	6	7	Rank
1.	Lack of mineral rich land	X							6Th
2.	High cost	2	X						1St
3.	Bureaucracy/lengthy waiting periods	3	2	X					3Rd
4.	No incentives/support	4	2	4	X				2Nd
5.	Mistrust about government's intentions	5	2	3	4	X			5Th
6.	Difficulty in completing application forms /process	6	2	3	4	6	X		4Th
7.	Other	1	2	3	4	5	6	X	7Th
Number of participants		1	6	4	5	2	3	0	

Source: Focus Group Discussion in Gbane (2015)

Similarly, high costs, bureaucracy/lengthy waiting periods and no incentives or support were identified using pairwise ranking as the factors with severe effect on miners’ resolve to regularize in Sherigu. One other serious factor identified in Sherigu was lack of mineral rich land (Table 4.8).

Table 4.8 Pair-Wise Ranking of Factors That Affect Regularization In Sherigu

Factors that affect regularization		1	2	3	4	5	6	7	Rank
1.	Lack of mineral rich land	X							4 Th
2.	High cost	2	X						1 St
3.	Bureaucracy/lengthy waiting periods	3	2	X					2 Nd
4.	No incentives/support	4	2	3	X				3 Rd
5.	Mistrust about government’s intentions	1	2	3	4	X			5 Th
6.	Difficulty in completing application forms /process	1	2	3	4	5	X		6 Th
7.	Other	1	2	3	4	5	6	X	7 Th
Number of participants		3	6	5	4	2	1	0	

Source: Focus Group Discussion in Sherigu (2015)

According to some miners in both Gbane and Sherigu, they only engaged in small scale mining to raise capital to undertake a different livelihood activity. They were therefore operating temporarily until they raised capital required for this other livelihood activity.

For this reason, those miners were not ready to regularize their activities. This and other factors were captured under the seventh factor (Tables 4.7 and 4.8).

4.3 Processes and Conditions for acquiring and use of land for small scale mining

Mine pit owners in Gbane and Sherigu were mostly migrants, migrating from communities nearby or sometimes outside the Upper East Region. Majority of such miners therefore did not operate on their personal or family lands. The study sought to understand how land was acquired in the study area for small scale mining by miners and the conditions, if any, under which these lands were acquired. For miners who were operating without conditions and those operating on their family lands, the study also tried to find out if there was any form

of reward to landowners and community authorities, for the use of land. The study found that miners acquired land for mining through a series of processes and were often given these lands under varied terms and conditions. This allowed them to continue to operate without licenses, and they in turn shared their earnings with landowners and community authorities such as Chiefs, Tindanas and Assembly members.

4.3.1 Ownership of land and land acquisition processes

Land ownership in Gbane and Sherigu is mainly customary. Land is held by skins, clans, families or individuals and managed by custodians. As such, land acquisition mostly started with contacting the individual landowner or land-owning family or clan. However, a miner could not start mining without the knowledge or consent of the traditional authorities of both communities notably the Chiefs and Tindanas. The study found out that land for small scale mining could be „bought“ - that is, acquired in exchange for money in Gbane. This was common with the small scale miners operating with licenses. Unlicensed operators in Gbane and Sherigu, however, worked on lands obtained through verbal agreements and negotiations with no tenure security. Mine owners engaged in different processes for acquiring land for their activities. These different processes are shown in Table 4.9. Land acquisition processes were similar in both Gbane and Sherigu except that the process was more favourable for prospective miners from Sherigu than migrant miners.

In Sherigu, some miners alluded to contacting the Forest Services Division of the Forestry Commission in Bolgatanga as part of processes to acquire land for mining.

Miners operating on their own or family lands only sought the consent of family heads and also informed the traditional authorities.

Table 4.9 Process of Acquiring Land for Small Scale Mining

Process	Number of respondents	Percent
1. Contacted Traditional authorities	20	50.0

2. Contacted landowners and chief	12	30.0
3. Contacted original owner of abandoned pit	1	2.5
4. Contacted family and chief	2	5.0
5. Contacted chief and forestry people	1	2.5
6. Contacted traditional authorities and senior mine owners	2	5.0
7. Did not contact anybody	1	2.5
8. Contacted only family head	1	2.5
Total	40	100.0

Source: Field survey (2015)

This study revealed that some mine owners were also engaged in illegally giving out areas to others to mine or aided them in the process of acquiring land for mining. This happened in two ways; a) where some miners carried out their activities in abandoned pits originally owned by someone else, and b) where a prospective miner is allowed to work in an area believed to be bearing gold deposits traced from some other area. However, in both cases, the prospective miner still needed the consent and backing of the traditional authorities.

4.3.2 Terms and conditions for obtaining land for small scale mining

Studies have shown that acquiring land for small scale mining, in many cases, came with terms and conditions. These conditions took many forms, including contributing to fund community activities, and often accrued to traditional authorities or landowners. The situation was not different in Gbane and Sherigu as 75% of respondent miners were operating under certain terms and conditions while 25% were mining without conditions. However, all 25% of miners operating without conditions confirmed giving some of their output to Chiefs and landowners, although voluntarily.

In Gbane and Sherigu, various conditions were given to miners for operating in the area. Notable among the conditions given were; that miners give a portion of their gold output to traditional authorities, landowners, sponsors and original pit owners. Miners also had to

contribute in cash to finance community projects/activities like festivals and libation pouring (Table 4.10).

Table 4.10 Conditions for Grant of Land for Small Scale Mining

Condition	Number of respondents
1. Give a portion of output to original pit owner	1
2. Give gold out to landowners	1
3. Give output to Chief and sponsor	2
4. Give gold output and contribute to community projects/activities	2
5. Don't fell trees, burn bushes, publicise mining activities and don't engage under-aged people	3
6. Give gold output to Chief and landowners	4
7. Give gold output to Traditional authorities	5
8. Don't fell trees or burn bushes	5
9. Don't fell trees and give output to Traditional authorities	7
Total	40

Source: Field survey (2015)

Gold output given to traditional authorities, landowners, sponsors or original pit owner, for use of land ranged between one and two mini-bags (25kg bags) of ore for every ten bags dug-out. „Payment“ in gold ore was preferred to fiscal cash, according to miners, because, recipients could obtain gold worth more than the amount that would have been received in cash.

4.3.3 Respondents' perception on access to land for small scale mining

Forty-five percent of respondent pit owners perceived land acquisition for mining in Gbane and Sherigu as being simple and 55% perceived the process as being difficult and saddled with stringent conditions. Miners who perceived the process to be easy were mostly indigenes, coming from mining communities, and also operating on family-owned lands. Such miners, the study found, did not find it difficult obtaining land as the migrant pit owners did. Miners were also not given a specific time period for which to operate on lands leased

to them for mining. As such, miners could carry out their activities on a parcel of land for as long as they wanted. This further fuelled the perception that access to land was simple.

4.4 Existing Requirements being operationalised and forms of regularization

The study sought to find out if miners had already met some of the requirements for obtaining operating permits, and if so, which requirements were being met. Establishing requirements which had been completed enabled the study know how far miners had gone in acquiring licenses, and also to suggest ways by which miners could be supported to meet the other requirements necessary for obtaining a license. The study also tried to identify the various forms of regularisation with which miners were operating. It came to light that, indeed, miners had met some of the basic and less expensive requirements and were also operating at varied levels or forms of regularization.

4.4.1 Basic requirements for regularisation

The grant of a Small scale mining license in Ghana is contingent on the prospective license holder having met some basic requirements. First, the miner must be a Ghanaian. Data from the study suggest that all respondent mine pit owners were Ghanaians and hailed from either the mining communities or other places within Ghana. It was discovered, however, that few employees and most gold buyers in Gbame were of foreign nationality. Most buyers of gold, according to miners, were Moshie-speaking and believed to have come from neighbouring Burkina Faso. These buyers/dealers had their agents who did the buying from miners on the dealers' behalf and created an illegal market for trading in gold. The Moshie-speaking gold dealers provided an illegal market for miners who, otherwise, would have found it difficult to sell their earnings. The availability of this illegal market, in itself, may have negatively affected miners' resolve to regularize, since miners did not have to worry about where to sell and who to sell to.

Another requirement was that, a prospective miner must have attained the age of eighteen at the time of applying for a license. Information gathered through the field survey revealed that the youngest miner was 20 years old while the oldest miner was 56 years and the mean age of respondents was 39 years. Going by this, miners had also met this requirement for grant of a small scale mining license. It also came to light that some miners had been involved in small scale mining for a minimum of three years while others were engaged in it for as long as twenty years. This implied that some miners may have started their mining activities before attaining the age of 18 years.

4.4.2 Size of land and Mode of operation

Per PNDC Law 218, the size of the area in respect of which a license may be granted shall not exceed; a) three acres (1.2 hectares) in the case of a grant to any one person, or group of persons not exceeding four in number; b) five acres (2 hectares) in the case of a grant to any group of persons not exceeding nine in number; and c) twenty-five acres (10 hectares) in the case of a grant to a co-operative society of ten or more persons. Contrary to this, however, the study realized that small scale mining lands used by respondents were far smaller. Of the 40 respondents, 62.5% operated on less than an acre of land while 35% worked on lands between 1 - 2 acres (0.4 – 0.8 hectares). The largest land size recorded was about 3 – 5 acres (1.2 – 2.0 hectares) and was worked on by only one respondent representing 2.5%. Miners' inability to acquire and work on larger parcels of land, perhaps, was due to the stringent conditions for acquiring land, high cost of working larger lands and their inability to raise capital to finance their operations. This has resulted in lower production, and also affected negatively their ability to take on additional costs associated with regularization.

Although small scale mining legislations in Ghana allow for the grant of a license to individuals as well as groups or co-operative societies, mining activities in Gbane and Sherigu were largely done on individual basis. From the field survey, 80% of respondent

miners operated as individuals and 20% worked in groups. Out of the proportion of respondents that worked in groups, 7.5% each worked in groups of 5 – 9 and 10 – 15 persons while the remaining 5% worked in groups of 2 – 4 persons.

The study revealed that, in Gbane and Sherigu, most miners had a sponsor who funded, sometimes, the entire mining endeavour and who often took a portion of the ore after every excavation. Also employee miners were not paid using cash at the close of work but were given some of the ore to share as their wages for the day's service. Gold output or ore excavated was, in many cases, shared in the following proportions; 3:3:3:1 between the sponsor, mine pit owner, employees and Chief respectively. Mine pit owners who doubled as sponsors often got more, since they retained what otherwise would have been paid to the sponsor.

4.4.3 Other Documentation required

In applying for a small scale mining license in Ghana, the licensee is mandated by law to possess a site plan of the area for which a mineral right is being sought. In Gbane and Sherigu, only 12.5% of respondent miners possessed site plans of the areas they mined. The remaining 87.5% did not have site plans, and attributed it to a lack of money or it being the responsibility of the sponsor. Checks at the Minerals Commission in Bolgatanga revealed that it costs between 1,000.00 – 1,500.00 Ghana Cedis to acquire a site plan for a 25 acre parcel of land. This translates to between 40 and 60 Ghanaian Cedis for an acre of land. Another document required for processing a license application is the environmental permit from Ghana's Environmental Protection Agency (EPA). Respondents who had acquired this permit at the time of the study constituted only 2.5%. The larger percentage (97.5%) of respondents did not have this permit to operate.

A personal interview with the District Officer of the Minerals Commission, on 9th January

2015, revealed that a person seeking an EPA Permit needed to buy an Environmental Impact Assessment (EIA) form for 5.00 Ghana Cedis and also pay 750.00 Ghana Cedis for processing this permit.

4.4.4 Mercury use and related issues

All mine owners interviewed used mercury in their daily activities. According to the Minerals and Mining Act of 2006, “a small scale miner may purchase from an authorized mercury dealer the quantities of mercury that may be reasonably necessary for the mining operations of the small scale miner”. The study, on the other hand, found out that only 7.5% of miners bought mercury from licensed dealers. The remaining 92.5% relied on gold buyers/dealers for supplies. Of this group, 80% obtained mercury from gold dealers in exchange for gold output, 12.5% actually paid cash for mercury supplies from gold dealers.

It came to light that, many miners got their mercury supplies for „free“ from gold buyers/dealers on condition that miners sold their gold output to those gold buyers/dealers. This local arrangement between miners and gold dealers created an opportunity for miners to be cheated and short-changed. Miners, on the other hand, paid cash for mercury from same suppliers if they were unwilling to sell their gold output to the said suppliers.

4.4.5 Forms of regularization with which miners operate

With regards to influential community people - chiefs, landowners and local politicians - facilitating small scale mining activities, 82.5% of respondents confirmed that it did happen in either community. The other 17.5% were of the opinion that the phenomenon did not exist in the area. However, during the two focus group discussions in both communities, it was almost unanimously agreed that the phenomenon did exist.

Miners who disagreed about the existence of this phenomenon were thought to be trying to conceal information so as to protect the reputation of these influential persons. The role of influential community persons in facilitating illegal mining took different forms; some miners reported that the Chiefs intervened and provided protection in times of swoops by the regulatory authorities. According to them, the chiefs sometimes pleaded and took back their confiscated equipment and tools from the law enforcers and subsequently returned these tools to miners. Field data suggests that the phenomenon was more pronounced in Sherigu than in Gbane.

Also, 80% of respondents had informal arrangements with community leaders for the use of land for small scale mining and 20% operated without such arrangements. For those miners who had arrangements with community persons, 77.5% of them rewarded their collaborators in both communities with gold output. Some respondents who gave out gold output also reported contributing financially towards community activities like festivals and libation.

Aside operating with the consent and support of some community leaders notably the chiefs of both communities, the study did not identify any arrangements with government officials like officers from the Minerals Commission, Forestry Services Department, Environmental Protection Agency and Law enforcement agencies. All respondents to the study did not have any arrangements with government officials giving them tacit approval to operate. However, some miners in Sherigu said they gave parcels to officials of the Forestry Services Division in Bolgatanga at the end of the year. This claim, the study could not independently verify.

4.5 Encouraging miners to regularize their activities

Although respondent miners in Gbane and Sherigu expressed interests in registering and obtaining licenses to operate, they contended that they were constrained. As such, they requested some support from government to encourage them regularize. Several forms of support were requested by the miners (Figure 4.3). Whiles 67.5% of miners asked for a

combination of granting incentives/support, reduction in bureaucracy and license cost; 7.5% each asked to be given access to mineral rich lands, reduction in license cost and time; and providing support/incentives and reducing license cost only. Notably, 2.5% of respondents asked that government allowed them work, earn income before acquiring a license instead of the reverse, as it pertains now. Out of the remaining, 5% each said they would require the following support forms to regularize; a reduction in bureaucracy and license cost only; a reduction in license cost only; and the grant of support/incentives only.

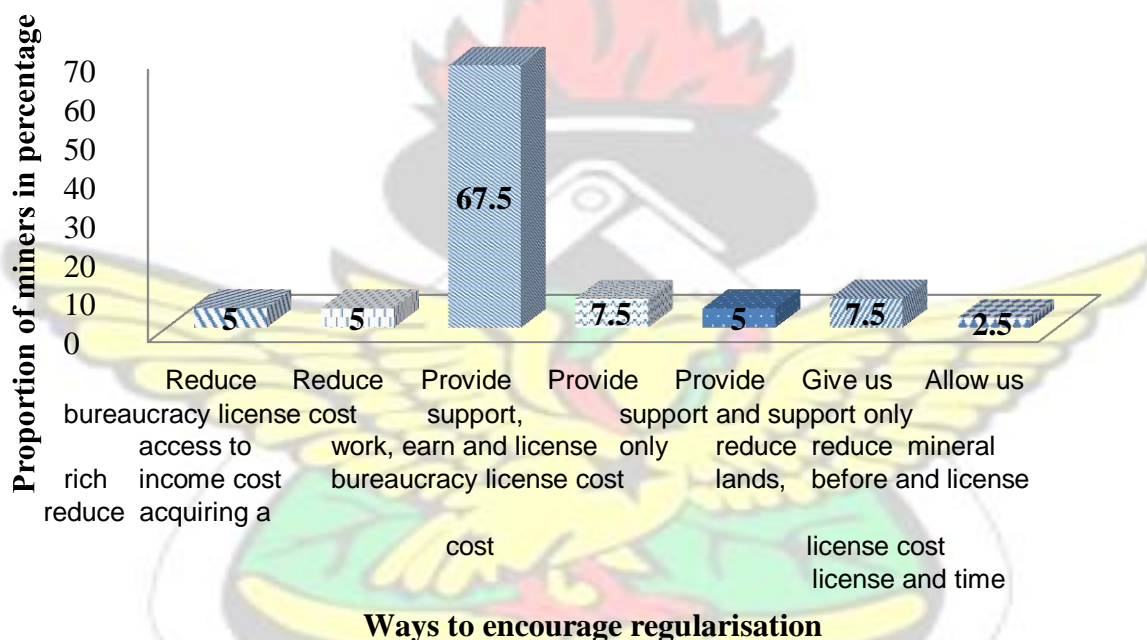


Figure: 4.3 Miners' views on how to encourage them to regularize

Miners also added that, encouraging them regularize would equally motivate them rehabilitate mined sites, even though they originally did not do so. They enumerated various kinds of support they would require to encourage rehabilitation of mined out sites. Kinds of support enumerated included provision of credit, training and modern equipment and seedlings.

CHAPTER FIVE

DISCUSSION

5.1 Commonalities of Small Scale Mining in Ghana

Small scale mining occurs in several communities in Ghana. Although carried out in different areas across Ghana, there seemed to be similarities in some activities, actors, operations, processes, and issues on its environmental impact and poverty reduction potential. Considering the tremendous importance of the sector to poverty reduction through job creation (Hilson and Osei 2014), the several actors involved play different but complementary roles. Some of these key actors in the operations include; Miner pit owners (Lange 2006); Daily wage labourers such as underground diggers/ excavators, blast men; Millers or mill operators; Sponsors, Gold buyers, Mercury Suppliers (Yakovleva 2007; Banchirigah 2008), and Downstream employees (Fisher 2007; Banchirigah 2008; Hilson *et al.* 2013; Hilson and McQuilken 2014), such as those who provide other services including commercial driving, food vending among others. The actors are categorized mainly into two; Direct employees and downstream employees.

5.1.1 Direct Employees in Small Scale Mining

Direct employees were involved in the day-to-day activities at the mines. They include; mine pit owners, daily wage labourers, millers or mill operators, sponsors, gold buyers, mercury dealers or suppliers among others. The Mine pit owner, also called „Ghetto owner“ in the study area, superintended over all mining activities at the sites and supervised daily wage labourers, as well as supplied materials and equipment for daily operations (Hilson 2012). In some instances the „ghetto owner“ also acted as the sponsor

(Hilson 2012) but on many occasions the pit owner relied on the sponsor for supplies needed to carry out the day's activities. In case of the latter, the "ghetto owner" and sponsor often forged an agreement for sharing the gold ore (Hilson and Pardie 2006; Hilson 2012). There were also instances where mine pit owners added up as sponsors, buyers and mercury dealers. Mine pit ownership was the preserve of males with little or no participation by females (Teschner 2012), similar to what pertained in Gbane and Sherigu.

The sponsor to a miner acted as the main financier for operations at the site. The study results suggest that, the role of the sponsor went beyond just providing funding and supplies to playing an important role in acquiring land for the mining endeavour. Often, the sponsor engaged in gold buying as well as dealing in mercury. By funding daily operations and sometimes providing mercury supplies on unfavourable terms, the likelihood of shortchanging miners by quoting below market prices for gold (Hilson and Pardie 2006; Banchirigah 2008) was high. This could derail poverty reduction efforts of miners and further trap miners in a vicious poverty cycle (Hilson and Pardie 2006; Banchirigah 2008; Hilson 2012).

Gold buyers were people involved in the purchase and sale of gold output from miners. Whiles some were licensed to engage in buying gold (Hilson and Potter 2003; Teschner 2012), many more operated without any permit. Licensed gold buyers also had licenses to deal in mercury. However, due to scarcity and difficulty in obtaining mercury in Ghana these buyers or mercury dealers operated under monopoly similar to findings of Hilson and Pardie (2006).

Millers or mill operators were involved in crushing and grinding gold ore which was washed subsequently to obtain the gold sediments. The study showed that mill operators were either private actors, operating their personal mills, or were employees of ghetto owners or

sponsors or gold buyers. This implied that unregistered mining had created so many jobs and was likely to continue especially with the support of sponsors. Therefore, efforts to regulate small scale mining in Ghana have to include these powerful people who sponsor miners and also tackle issues of providing support to miners.

The daily wage labourers were engaged in daily mining operations, which involved blasting, digging/ excavation, crushing and carrying ore to the mills, among others. Out of the daily wage labourers, women were said to constitute about 50% (Hilson 2001). Even though the study could not verify findings by Hilson (2001), it observed that women were engaged in crushing excavated ore and carrying them to the grinding mills. This was similar to findings of Teschner (2012) and Hilson (2012). However the study viewed the activities of women employees to be relatively less stressful, contrary to assertions of Teschner (2012).

5.1.2 Downstream Employees in Small Scale Mining

The downstream employees provided support services like selling food, alcohol, taxi driving and even sex (Hilson 2012). They offered mostly semi-skilled labour and services (Hilson and McQuilken 2014). While, direct employees were often seen in and around the mine sites, downstream employees, such as commercial drivers, food vendors and women engaged in washing the clothes of miners for monetary payment, were not necessarily present at sites. Employment in the downstream sector has enhanced incomes for these employees, but could increase the prevalence of sexually transmitted infections like HIV/AIDS, Gonorrhea, and Syphilis.

5.2 Nature and Mode of Operation of Small Scale Miners

Small scale mining provides direct employment to tens of millions of people in subSaharan Africa and has created innumerable economic opportunities for many millions more in

downstream industries (Hilson and McQuilken 2014). Per the operative definition of small scale mining adopted by this study, the activity could be done individually or in groups of at most nine persons, or in a co-operative society whose membership should not be less than ten. However, some unregistered operators in the study area worked in smaller groups, contrary to findings by Hilson (2012). Majority of miners worked individually and therefore employed daily waged labourers. That presupposed that mine pit owners operating as individuals bore most of the risks associated with mining (Hilson 2012) and received the benefits that accrued from the activity.

Miners in Gbane and Sherigu were often unable to raise capital, especially from banks, to fund their activities, similar to what pertains in other gold mining areas in Ghana (Banchirigah 2008; Hilson and McQuilken 2014; Hilson *et al.* 2014). They therefore relied on the individual miner's resources or resorted to other sources for financing, a phenomenon often linked with the increasing participation of Chinese in Ghana's informal gold mining sector (Hilson *et al.* 2014). As a result, they depended on and used mostly traditional, manual and rudimentary methods of mining featuring simple equipment like shovels, pick-axes, pans, chisels and hammers (Aryee *et al.* 2003).

Largely, unregistered small scale miners are noted for their use of low-tech and labour – intensive modes of exploitation (Hilson 2002a; Hilson and McQuilken 2014; Gamu *et al.* 2015). Similar to what pertains in Gbane and Sherigu, Iddrisu and Tsikata (1998) cited in Hilson and Pardie (2006) found out that, the equipment used by Ghana's small scale operators is highly inefficient, and could collectively extract, on the average, only 30% of gold from ore. The sector's low-tech and low skilled nature, according to Siegel and Veiga (2010), made barriers to entry low. This, together with factors such as limited employment

opportunities in other sectors, has contributed to the appreciably larger share of recorded employment and continuous growth of the sector.

Small scale mining has a perceived problem of child labour (Lange 2006; Hilson 2008; Human Rights Watch 2013); in Gbane and Sherigu, children were seen helping in the washing of gold ore. This activity exposed children to mercury which is hazardous, since mercury is applied to the sediments so as to attract the ore in the sediments at this stage of recovering gold ore. This exposure could lead to poisoning, respiratory and heart diseases or death. Children's involvement in small scale mining activities could also affect their attendance and performance in school and result in them dropping out of school. The use of child labourers in mine pits was absent in Sherigu perhaps because of a directive by community authorities forbidding the act, and as a condition for grant of land for small scale mining.

5.3 Environmental and Health impacts

Mining, irrespective of the scale, has some degree of impact on the environment. The extent of damage depends largely on the mining and processing methods being used (Aryee *et al.* 2003). The study observed that the surfaces of arable lands were being destroyed and degraded (Aryee *et al.* 2003; Hilson and Pardie 2006), in both Gbane and Sherigu since most mining activities were uncontrolled and unmonitored. Activities in Sherigu increased deforestation and could negatively affect community members who depended on the forest (Mwintwa *et al.* 2012). Miners often abandoned excavated pits (Aryee *et al.* 2003), which collected water during rains and posed as threats to life and property.

Small scale mining activities in the study area also involved the use of explosives to blast gold-bearing rocks and sometimes for downsizing the ore. This released dust particles into

the atmosphere which could cause dust-related ailments to miners and other inhabitants. The frequent blasting, using explosives, also had the tendency of impairing hearing.

Small scale miners were spurred by the prospects of short term returns (Banchirigah and Hilson 2010; Siegel and Veiga 2010), focused on securing enough money to meet daily needs (Hilson and Pardie 2006) hence they ignored the impacts of their activities on the environment. As such, they employed the cheapest available technique - mercury amalgamation (Cordy *et al.* 2011; Saldarriaga-Isaza *et al.* 2013) which resulted in the release of gaseous mercury into the atmosphere, inhalation of gaseous mercury by miners and mine workers as well as polluting water bodies. The uncontrolled use and disposal of mercury imposed health costs in the long run to the miner himself in addition to the community in which mining activities are carried out.

5.4 Small Scale Mining and Poverty Linkages

Small scale mining is the main source of subsistence for millions of people living in developing countries and perhaps the only livelihood alternative for these mining communities (Saldarriaga-Isaza *et al.* 2013). While it may have been the only livelihood source for many miners; it also provides an opportunity for miners and households to diversify their livelihoods (Kitula 2006; Spiegel 2009; Hilson *et al.* 2013; Hilson and McQuilken 2014). Small scale mining is now believed widely to be poverty-driven (Barry 1996; Hilson 2009; Geenen 2012; Hilson and McQuilken 2014; Gamu *et al.* 2015) perhaps due to widespread views that it has high potential in creating employment (Hilson and Osei 2014) and alleviating poverty. In this regard, small scale mining is said to have linkages with poverty.

In Gbane and Sherigu, miners generally had low levels of education as found by

Heemskerk (2005), often terminating at the basic level, with little or no skills for employment in the formal sector. They were therefore left with fewer options to meet their daily needs. However, the consequences of such low education levels, according to Saldarriaga *et al.* (2013) were two fold: a disregard for environmental and health-related issues; and the lack of skills to use better technologies. These outcomes ultimately had links with the poverty levels of miners and households in mining communities at large. The disregard for environmental issues, and their inability to use appropriate technologies reduced output and hence income as well as increased negative environmental impacts.

Even though small scale mining can help alleviate poverty, it is argued that the activity could become an agent of poverty (Hilson and Pardie 2006; Banchirigah 2008). For instance, miners operated under poor, dehumanizing conditions that posed as health hazards. They inhaled noxious mercury fumes, handled amalgam without protection, drank contaminated water containing elevated concentrations of mercury making them prone to ailments which necessitated the purchase of costly medicines (Hilson and Pardie 2006). This had the tendency of making them poorer as part of their income would have to be used in these purchases.

5.4.1 Small scale mining and rural incomes

Known for its potential in employing the poor, small scale mining presented a viable source of income for impoverished populations (Tschakert 2009; Siegel and Veiga 2010) in Gbane and Sherigu. Small scale mining was a primary source of income to some miners but to other miners it supplemented incomes from other activities. Similarly, Hilson *et al.* (2013) found out in a study in the Bole District that small scale mining enabled rural households to obtain wage earnings and diversify livelihoods. In congruence to these findings, miners in the study area engaged in mining to supplement incomes from agriculture and other livelihood

alternatives. This was because mining enabled farmers, who took up mining, to earn wages during unfavourable growing seasons (Hilson *et al.* 2013; Gamu *et al.* 2015) and in the dry seasons; thereby confirming assertions of Gamu *et al.* (2015) that small scale mining is done with other activities. Even though often associated with the ambition to get rich, Hilson and McQuilken (2014) opine that the movement to take up employment in unregistered mining is not a choice motivated by ambition but more reminiscent of a survival strategy, considering the diminished viability of farming.

Miners were also continuously trapped in poverty (Hilson and Pardie 2006; Banchirigah 2008) owing to the over-exploitation by mercury suppliers, gold buyers and sponsors. There were often informal arrangements, between miners and mercury suppliers, gold buyers and sponsors alike, which compelled miners to sell their gold output to the latter in exchange for mercury supplied ahead of time (Hilson and Pardie 2006). By supplying mercury to miners, the miner was compelled to sell his gold output to the sponsor, who often quotes prices below the market price for same quantity of gold. This was prevalent in Gbane and Sherigu, and it further impoverished miners leading them to mine more areas in an attempt to free themselves from their sponsors (Hilson and Pardie 2006; Hilson 2012).

The study also identified another relationship between miners and their sponsors which had the potential to worsen miners' poverty situations. In this arrangement, miners were supplied most materials and equipment for daily activities including money for feeding, in the form of „soft loans“. Re-payment was in the form of gold ore or it was deducted from gold proceeds when selling to the sponsor. Such an arrangement also gave sponsors the leeway to cheat miners as reported in Hilson and Pardie (2006) and Banchirigah (2008).

5.5 The nature of Small Scale Mining in Gbane and Sherigu

The study found out that most miners in Gbane and Sherigu knew of the availability of the opportunity to register and obtain operating permits. Miners also knew they had to first contact the Minerals Commission when seeking a license and they knew the location of the office. Most miners perceived regularization to be beneficial to them. However, only 10% of miners had started the process of getting regularized at the time of the study.

It was realized that, miners had not regularized their activities not to defy state laws but because of constraints. As one miner in Sherigu (Personal communication, Moro 2015) indicated, they want to register and get permits to operate but the process was difficult. The study revealed that the cost of acquiring a license was very high (Hilson and Potter 2003; Banchirigah 2008). As a result most miners could not afford it so preferred to operate until they had acquired the amounts for securing a license. The costs included the statutory fees charged at various stages of license acquisition process (Minerals Commission 2010) and those paid to officials informally to facilitate the processing of an applicant's documents. Many miners also resorted to having informal agreements (Nyame and Blocher 2010; van Bockstael 2014) with local community authorities and landowners that sought to benefit both miners and landowners; local community authorities and landowners received payments in gold ore or cash and in turn gave their approval and support to these miners to operate.

These informal arrangements were relatively cheaper and miners were better protected from burglars and regulatory institutions and their officials, thereby reducing the risk of being caught and sanctioned. Once this risk of being caught and sanctioned was reduced, miners had little motivation to go through the legitimate process where they would incur costs. Miners who had started the process up to a stage were also comfortable operating at this

level of formalization, since they could not complete the process due to constraints. These miners did not complete the process because of cost involved, bureaucracy or because they were content with informal arrangements which were cheaper alternatives.

This supports the assertion that miners operate at different stages of formalization (Teschner 2012; van Bockstael 2014).

The high costs of acquiring a license was linked to the bureaucracy associated with processing a license application since miners, in some cases, had to incur additional cost to enable speedy processing. The prolonged time for processing an application had resulted in long waiting periods (Hilson and Potter 2003) for obtaining the licenses; a duration for which applicants would have had to wait without any incomes or source of livelihood. Another pressing constraint identified was the inadequacy or lack of incentives to attract miners into the formal sector. According to Hilson (2009) confirmed by Geenen (2012), formalization is a process and miners need incentives to join this process. Miners in the study area confirmed getting some training from the Minerals Commission in Bolgatanga. However, the study suggests that rather than having one-time engagements with miners, more frequent sessions should be held with them. This would foster trust and enable a better understanding of the sector's issues. Through these regular engagements, more practical and miner-sensitive interventions would be introduced. When miners perceive their wellbeing as important to government's regularization efforts they would be ready to formalize. Geenen (2012) cites some miners expressing their preparedness to work and declare their production, if they are assisted materially, technically and financially.

The miners contend that failure of the State to provide support makes them operate illegally in the mines, as they „try to make a living“, in an environment where there are virtually no jobs available (Geenen 2012). Banchirigah (2008) asserts that rather than helping regulate

the sector by bringing people within the legal domain and giving them security of tenure, small scale mining reforms appear, as Hilson and Potter (2003) explains, to be doing the exact opposite; further encouraging individuals to mine illegally.

5.6 Dualism in laws, Mineral right verses Surface right versus, and implications for regularisation

The Minerals Act of 1962 (Act 126), and subsequently The Minerals Act of 2006 (Act 703), vested all mineral deposits in their raw form found in Ghana in the State. This has been the case although several amendments have been made to minerals and mining related statutes. The vesting of minerals in the State means that regardless of the ownership of the ore-bearing land, only government of Ghana reserves the right to own, exploit or trade in such minerals (Nyame and Blocher 2010). Since vesting mineral deposits in the State meant giving it mineral rights, the State was solely responsible for granting mineral rights for mineral development.

Although the Minerals Act of 1962 vested all mineral deposits in the State, the lands underneath which the minerals lie continue to be owned by parties other than the State. According to Larbi *et al.* (2004) cited in Nyame and Blocher (2010), three major types of land ownership exist in Ghana; state land, vested land and customary land, with the latter type forming about 70% of the land in Ghana. Customary lands are held by various stools or skins, families or clans, and are managed by custodians – chiefs or family heads (Agbosu 2000 cited in Marfo *et al.* 2012). In Gbane and Sherigu, land ownership was customary.

The situation in which mineral deposits were governed by statutory law while ownership of mineral bearing lands was held by another party and governed under customary practices posed a challenge in the administration of mining activities. For example, due to the system

of land ownership in the study area, land acquisition was verbal, done through direct negotiation (Nyame and Blocher 2010). Payment of royalties went directly to individual landowners or members of the land owning family. Influential community members, notably chiefs, were mentioned as having aided illegal miners in carrying out operations. Miners said Chiefs played a critical role in intervening and interceding on their behalf during security official-led swoops and sometimes collected miners' equipment confiscated during such swoops. These equipment were subsequently returned to miners so as to enable the continuous perpetuation of illegal mining activities, which in turn benefited the chiefs and influential people through payments for excavated ore. This beneficial and reciprocal arrangement encouraged landowners, including influential community people, to consider the short term and seemingly certain economic benefits as being more important (Nyame and Blocher 2010).

The result has been widespread unregistered operations, supporting the perception that galamsey activities in Gbane and Sherigu have the approval and broad acceptance of society (Prno and Slocombe 2012). Because landowners benefit under the current dichotomy – surface rights versus mineral rights – they easily agreed and approved the conduct of illegal mining activities on their lands, thus giving miners a social license to operate (SLO). Miners were also protected from arrest. Under these mostly verbal arrangements, miners were given permission to mine on lands without tenure and miners in turn paid or rewarded landowners. By these arrangements, miners had the tacit approval of landowners to continue to mine. The implications were that; the sector continued to flourish since acquiring land for operations was relatively easier and there was little motivation to regularize, considering the protection enjoyed under informality, cost and bureaucracy associated with acquiring a license.

5.7 Forms of Regularization with which Miners Operate

As stated earlier, the study discovered that unregistered miners in Gbane and Sherigu had met some of the requirements for obtaining operating licenses. While some miners had started the process to get formalized and were at various stages of the process, others had not made efforts to begin the process. Miners belonging to the latter operated based on their local and informal agreements and arrangements with landowners and other influential community members.

5.7.1 Existing Regularization Requirements being Operationalized

In Gbane and Sherigu, unregistered miners met perhaps the most important and basic criteria for obtaining a small scale mining license; age and nationality. Mine pit owners ranged between 20 and 56 years, above the required age of 18 years and were all of Ghanaian nationality. Although mostly Ghanaian, some miners migrated from other parts of the country such as Bolgatanga and environs to these mining sites (Hilson 2012). The study did not identify mine pit owners of different nationality but identified some employee miners who were of foreign descent, migrating from neighbouring Burkina Faso. This confirms the findings of Hilson and Potter (2003).

Again, miners in Gbane and Sherigu operated as individuals and in groups (Hilson 2012), the majority of which operated as individuals. This was also in consonance with provisions for acquiring a license; however group membership did not necessarily follow the legal provisions since groups were often larger than what was stipulated and miners worked on relatively smaller parcels of land. This could be attributed to the poverty situations of miners (Barry 1996; Hilson 2012; Hilson and McQuilken 2014) which limits them from working on larger parcels and or the inability of miners to determine the amount of gold deposits in

the land. Miners therefore may have adopted the „try and see“ approach so as to minimize losses in the event of unfruitful mining.

Few miners, 12.5% of them, possessed a site plan of the area they operated on. Findings from the study suggest that some miners who had reached this stage of the process were content and not determined to go further since that meant incurring additional costs (van Bockstael 2014). They therefore operated at this level and combined it with local formalization arrangements (van Bockstael 2014).

Few miners (2.5%) advanced the process to the stage of acquiring a permit from the Environmental Protection Agency (EPA). It was discovered that an applicant for this license was required to pay at least GH¢ 755.00 or USD 189.00 (Personal communication, Okyere 2015), at an exchange rate of GH¢ 4.00 to the US dollar.

The study observed that no miner went beyond the acquisition of an EPA permit stage, and that miners had little difficulty meeting requirements that involved lower costs and fell out as the process furthered since advanced stages were more expensive. This could mean that miners were not too sure they would recover their investments from current operations; or miners were not committed to formalizing their activities because of the many unresolved issues associated with formalization process. The lack of incentives or support or their contentment with local arrangements allowed them to operate without licenses.

5.7.2 Forms of formalisation

Similar to findings by Teschner (2012) and van Bockstael (2014), miners in Gbane and Sherigu were operating with different forms of regularization, and operated at varied levels or stages of regularization. Two forms of formalisation were identified; legal formalization

and locally-grounded, informal formalization. While few, about 10%, of miners had started the process of formalization, and were at various levels or stages of the process (van

Bockstael 2014), the majority operated based on the „special arrangements“, „goodwill“, and tacit approval of community authorities such as chiefs.

With the support of these community authorities the risk of being caught and sanctioned was minimised (ILO 1999). As such many miners were comfortable relying on prevailing local formalization arrangements, which seemed cheaper to the alternative of joining the formal economy. Suffice it to say that, while most unregistered miners operated based on the locally-forged arrangements with community people, some actually operated based on a combination of truncated formalization process and locally-agreed upon arrangements allowing them to operate.

5.8 Recognising and Nurturing Small Scale Mining, a necessary precursor to increased formalization

Small scale mining, though widely seen to be poverty driven, has been a major source of livelihood for people in many parts of Ghana. It is perceived as important in many communities that find in gold extraction a complementary income source (Kitula 2006; Spiegel 2009). Considering the tremendous potential of small scale mining in creating employment (Hilson and Osei 2014) and reducing poverty (Tschakert 2009), little has been done to facilitate the industry's „smooth“ transition into the formal sector (Hilson and Potter 2003).

Unregistered miners, the world over, have often been viewed negatively, assigned derogatory names and titles including portraying them as „threats“ (Ryan 2006 in Tschakert

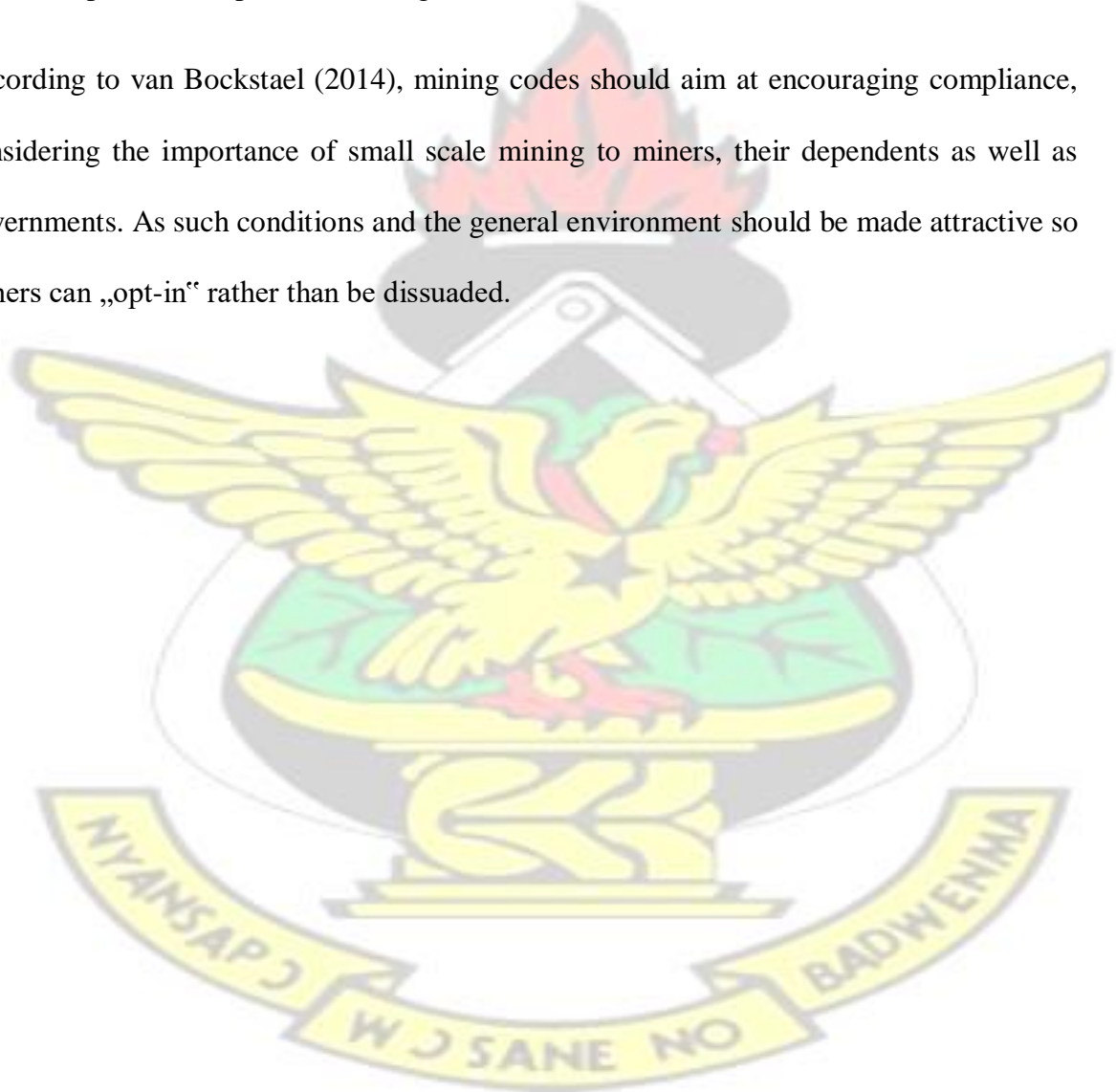
2009). Small scale miners in Ghana are criminalised, thus contributing to their lack of credibility (Hilson and Potter 2003). Discourses in the media have sought to „contaminate the identities“ of miners rather than the environment in which they work (Tschakert 2009). By this, miners have been left out of decision making regarding the sector and are not able to negotiate alternative livelihood opportunities (Tschakert 2009). Consequently, there is very little understanding of the activity.

But after over thirteen years of almost „failed“ efforts at getting small scale miners to formalize, perhaps the most viable option is to begin to recognize small scale mining as a livelihood (Hilson and Potter 2003; Tschakert 2009); a source of employment (Hilson and Osei 2014), and a poverty reduction tool (Hilson and Pardie 2006; Hilson and McQuilken 2014; Hilson and Osei 2014).

Recognizing and nurturing small scale mining is a necessary precursor to increased formalization. Recognizing and nurturing small scale mining can be done in three forms; research, policy and support. From a research perspective, recognizing „galamsey“ people as research partners, not outlaws (Tschakert and Singha 2007) allows for increased participation of miners in decision making and better understanding of sector. This will enable the enactment and adoption of workable policies, laws and solutions to matters arising from the sector. Another form of recognition is for the government of Ghana to see small scale miners as development partners (Hilson and Potter 2003). By this recognition, long-term partnerships that value different knowledge types, participatory schemes environmental monitoring (Hilson *et al.* 2007) should be established with miners. This will reduce mistrust between miners, on one side, and government on the other side as well as improve the credibility of miners. Top down and repressive policies would likely be ineffective at getting miners to formalize (Clausen *et al.* 2011), hence continuously sticking to these will dissuade unregistered miners from wanting to join the formal economy.

The small scale mining sector requires support in order to encourage miners to formalize. These forms of support should however be backed by research, and a better understanding of the sector resulting from improved relationships between miners and government. The Youth in Mines programme, a new model under GYEEDA, sought to enable small scale miners to be recognized by the Minerals Commission and to receive training to restore the environment. This laudable initiative seemed like a necessary first step to improve the relationship between operators and regulators (Tschakert 2009).

According to van Bockstael (2014), mining codes should aim at encouraging compliance, considering the importance of small scale mining to miners, their dependents as well as governments. As such conditions and the general environment should be made attractive so miners can „opt-in“ rather than be dissuaded.



CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Small Scale Mining in Gbane and Sherigu has been a source of livelihood for many including those not skilled enough for employment in the formal economy. For some people, it has also provided money to supplement incomes earned from other livelihood activities such as agriculture. Generally, small scale mining could be said to have tremendous benefit for the people of Gbane, Sherigu and even neighbouring communities including the possibility of helping alleviate poverty in these areas.

Several factors had prevented unregistered miners from regularizing their small scale activities, land acquisition processes were faced with conditions and arrangements that sought to benefit landowners, chiefs and other influential persons in Gbane and Sherigu in return for local consent to mine. Most miners had met some basic requirements for obtaining licenses and were generally operating with two forms of licensing; formal and informal. Miners who had started the process to get regularized were at various stages of the process, hence operated with some level of formalization. The study concludes that supporting small scale miners by reducing the license cost, bureaucracy, providing credit and other incentives will encourage them to regularize their activities.

6.1.1 Factors that Prevent Miners from Regularising

Although most mine pit owners were abreast with recent developments in the small scale mining sector, including the availability of an opportunity to regularize, only 10% of them had started the process to get regularized at the time of this study. It was however realized that miners would ordinarily have registered, but for the many factors that have been left unattended to by policy makers and regulatory bodies. The study has shown that

nonregularisation by miners did not amount to a defiance of State laws, but influenced by a multiplicity of factors.

- a. High cost of acquiring a license was the most important factor that prevented miners from regularizing. The cost was composed of formal or legally approved fees, payable at some stages of the process, and informal or unapproved fees paid to government officials to enable the speedy processing of a license application. The informal and unapproved fees were directly associated with another very important factor, bureaucracy.
- b. The process of acquiring a license in Ghana is known to involve a set of rigid procedures, often resulting in long waiting periods for licenses to be processed. Bureaucracy either prevented prospective licensees from following the process to its completion or starting it, in the first place. The bureaucracy was also accompanied by additional costs to miners, as it enabled government officials to exploit miners desperate to process their applications.
- c. The lack of support and incentives to miners ill-motivated them from regularizing and acquiring licenses to operate. Small scale mining continuous to be criminalized in media circles and public discourses giving miners a bad image. Rather than the continuous criminalization and harassment of miners, they require genuine support and incentives as motivation to get regularized. For example, providing credit to miners would enable them pay for the cost of regularization so that their activities could be better monitored. This would also enable miners adopt and acquire modern technologies and equipment as well as reduce the environmental effects of their mining activities.

6.1.2 Acquiring land for small scale mining in Gbane and Sherigu

Land ownership in Gbane and Sherigu was on customary basis, often owned by clans, families, and skins and held in trust by custodians. As such, a prospective miner had to negotiate with the owners of the land, on which he intended working, for grant of land. Miners acquired land through various processes, but ultimately the consent of the Chief or traditional authorities had to be sought before commencement of mining activities. The study revealed that Chiefs, landowners and influential community persons, by virtue of their owning lands, engaged in informal deals or arrangements with small scale miners.

Such arrangements involved the release of lands to miners in return for payment in gold output from daily earnings. Lands released to miners did not have a fixed tenure, exposing miners to several risks and exploitation from landowners. By these arrangements, which gave miners a tacit approval to operate, miners were no longer bothered about regularizing since these arrangements were relatively cheaper and more protective. Chiefs and other influential persons in the area, desperate to continue to benefit from unregistered mining activities, often protected miners and in some instances negotiated for the release of confiscated equipment by law enforcers. These equipment were subsequently returned to miners by Chiefs and influential persons.

6.1.3 Existing Requirements being Operationalised and Forms of Regularization with which Miners Operate

The study discovered that small scale miners meet some of the basic and relatively cheaper requirements for acquiring a license to operate. Some of these requirements included those on; age, nationality, operating as an individual or in groups, among others. However, miners hardly met the relatively expensive requirements like possession of a site plans and an environmental permit.

It was realized that miners in Gbane and Sherigu were operating with different forms of licensing and at various stages of formalization. Two parallel systems of licensing, formal and informal, were identified to be existent in the study area. The formal system involved the grant of licenses by the Minerals Commission, the body legally mandated to issue licenses. Under this system, access to land was determined by law and royalties were collected on behalf of landowners. The informal licensing arrangements, however, involved direct negotiation for the allocation and access to land. With this system, royalties were determined through negotiations and verbal agreements and paid directly to individual landowners or land-owning families. This system of licensing is cheap, not bureaucratic, fast, and often arranged to satisfy the interests of parties involved. As such, it was most preferred by unregistered small scale miners and local community members.

While some miners, 10%, had started the process of regularizing and were at various stages of the process, others, 90%, had not started. Some miners therefore operated with a combination of this incomplete formalization and the one provided through informal arrangements with landowners, chiefs or traditional authorities and other influential community persons, and others relied solely on the informal licenses granted by the communities.

6.1.4 Supporting Small Scale Miners to Encourage Regularisation

Having identified the lack of incentives and support as a factor limiting miners' resolve to regularize, the study is of the view that attempts to recognize and nurture small scale mining would be a necessary first-step to increased formalization. Nurturing the activity could also take the forms of; i) researching to gain better insights regarding small scale mining activities and its actors; ii) fashioning out appropriate and feasible policies and laws to better govern the sector; and iii) introducing and undertaking miner-sensitive interventions or support

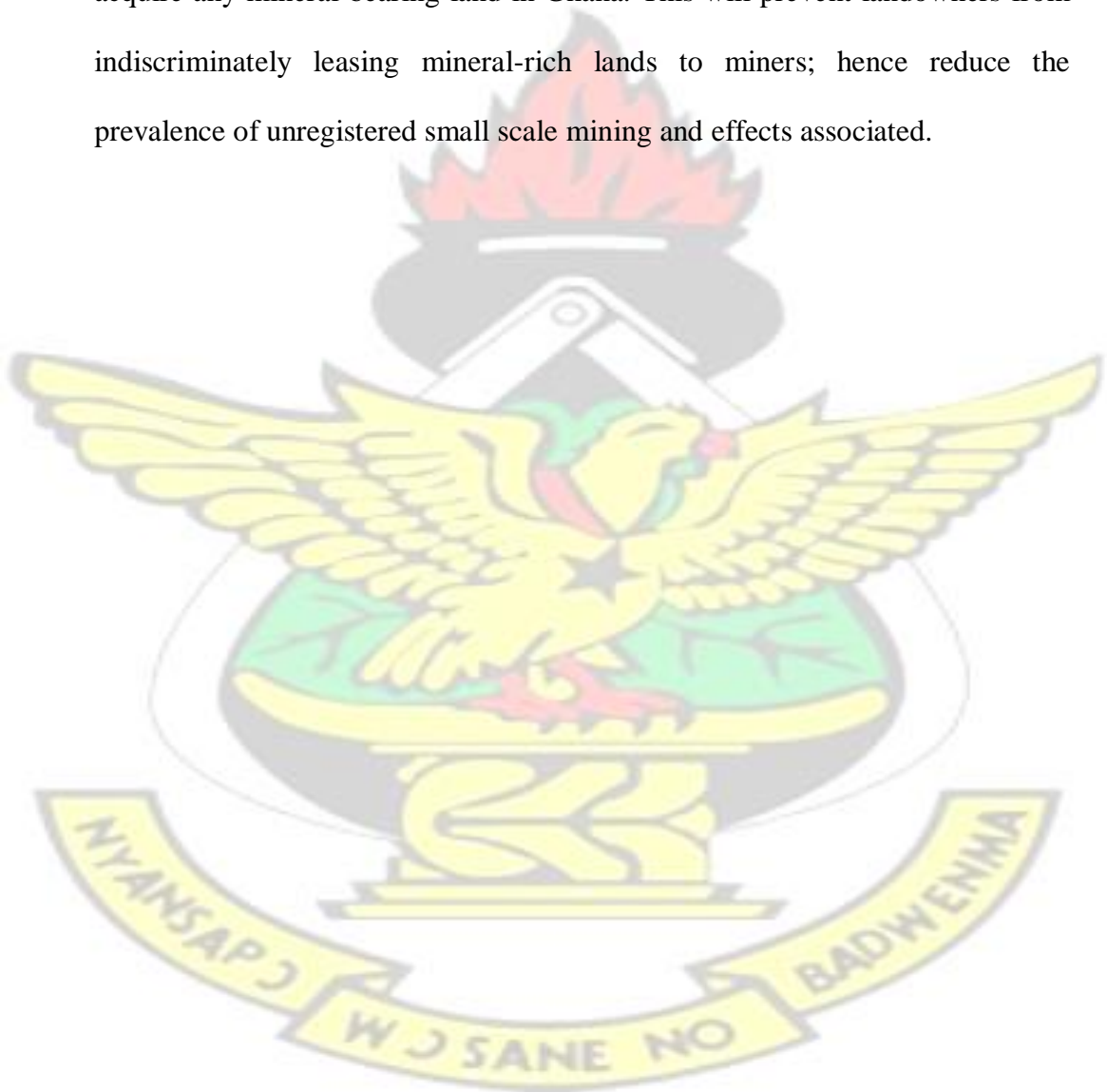
schemes. By recognizing small scale mining as a livelihood, accepting miners as people struggling to earn a living, and fashioning out appropriate policies and interventions to their challenges, miners will be better motivated to regularize.

6.2 Recommendations

The study recommends that the following be done to increase knowledge of the sector's workings as well as encourage unregistered miners to take up regularization. This would enable regulatory institutions to monitor miners and their activities, provide them appropriate support so that miners can meet their daily needs while also reducing the environmental impact.

- Government through the Minerals Commission should have regular engagement, in the form of meetings and trainings, with miners to identify and understand miners' needs, challenges and views on improving the sector. If possible, the Multi-Stakeholder Dialogue (MSD) approach used in dealing with illegal chainsaw milling in Ghana should be adopted and modified for use in handling illegality in small scale mining.
- Government should provide appropriate, easy to adopt support or incentives and interventions to miners. Incentives like providing credit, tax holidays, equipment leasing schemes among others should be extended to unregistered operators to motivate them to register and acquire operating licenses.
- Also, Government should consider reducing the cost of acquiring a license and the bureaucracy associated with the license acquisition for speedy processing of applications. This can be done by decentralizing the license acquisition process so that miners could apply, process and obtain a license from the District Centres of the Minerals Commission, without having to travel to Accra.

- Government, through the Minerals Commission, should involve Chiefs, and other opinion leaders in Gbane and Sherigu in efforts to get small scale miners registered by sensitizing them and also obtaining a buy-in from them.
- The Minerals Act of 2006 (Act 703), which vests in the President the ownership of minerals on behalf of the Republic, should be broadened to include lands bearing mineral deposits. That is, the law should allow the state to compulsorily acquire any mineral-bearing land in Ghana. This will prevent landowners from indiscriminately leasing mineral-rich lands to miners; hence reduce the prevalence of unregistered small scale mining and effects associated.



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APPENDIX I

QUESTIONNAIRE ON REGULARISING SMALL SCALE MINING IN GBANE AND SHERIGU IN THE UPPER EAST REGION; THE MINERS“ PERSPECTIVE

Dear Respondent,

I am an MPhil Natural Resource and Environmental Governance student of the Kwame Nkrumah University of Science and Technology, Kumasi - Ghana. I am currently writing my thesis on the above-mentioned topic and wish to solicit your responses to the questions below to enable me carryout this academic exercise. Be sure that, information given me will

be used solely for this exercise and will be treated with the greatest of confidentiality and you will remain anonymous. Thank you

Do you consent to being part of this study? A. Yes B. No

Questionnaire number ----- Start: ----- End: -----

A. Socio-economic information

1. Name of community -----
2. Gender of respondent ----- A. Male B. Female
3. Do you reside in this community? A. Yes B. No
4. If no, where do you reside? A. Nearby community but within the district
B. Outside the district C. Outside the region D. Other (specify) -----

5. How old are you? -----
6. What is your highest level of education attained? A. Primary B. Middle/JHS
C. S.H.S D. Tertiary E. None F. Other (specify) -----
7. How many years of education did you have? -----
8. Prior to doing small scale mining, what work were you engaged in? A.
Unemployed B. Farming C. Government D. Petty trading/ craftsmanship
E. Other (specify) -----
9. Do you still work in this capacity? A. Yes B. No
10. If no, why? A. Retired B. Retrenched C. Gone bankrupt D. Other
(specify) -----
11. How many dependents do you have? -----

B. Perceptions miners have about regularizing their activities

12. How long have you being in small scale mining? -----
13. What makes small scale mining in this community so attractive? A. abundance of
gold B. easy access to land C. available market D. easy access to
labour and supplies E. Other (specify) -----

14. Do you know you are allowed to regularise your activities? A. Yes B. No
15. If yes, what do you think about regularizing your activities? A. it will benefit small
scale miners a lot B. Only government will benefit by taxing us C. Large mining
companies will benefit, not us D.
Other(specify) -----

16. If no to Q. 48, do you think regularizing your activity will benefit you? A. Yes
 B. No
17. What factors prevent you from acquiring a license? (In case of many factors, please rank)
- A. Lack of mineral rich land available []
 B. High costs []
 C. Bureaucracy / lengthy waiting periods []
 D. No incentives / support []
 E. Mistrust about government's intentions []
 F. Difficulty in completing application forms []
 G. Other (specify) -----

C. Process and conditions under which land for small scale mining is acquired

18. Are you operating on your own (family owned / inherited) land? A. Yes
 B. No
19. What processes did you go through to acquire this land for your activities? -----

20. Are there any terms and conditions for the grant and use of this land for small scale mining? A. Yes B. No
21. If yes, what are these terms and conditions? -----

22. If no, do you pay or reward the landowner(s) in any way? A. Yes, but voluntarily
 B. Yes, compelled to do so C. Not at all
23. Are the processes and terms the same for land acquired for other livelihood activities, example agriculture? A. Yes B. No
24. If no, what are the differences? -----

25. In your view, do you think access to land for small scale mining is easier in this community? A. Yes B. No
26. How long have you been given to mine on this land? -----
27. Do you do prospecting on the said land prior to commencement of operations?

A. Yes B. No

28. If no, how do you know the land contains gold? -----

D. Existing Requirements being operationalised and forms of regularization

29. How many acres of land do you operate on? A. < 1 acre B. 1 – 2 acres C. 3 – 5 acres D. > 5 acres

30. Do you operate as...? A. an Individual B. a Group

31. If in a group, how many are you in the group? A. 3 – 4 B. 5 – 9
C. 10 – 15 D. > 15

32. Do you have a site plan of the area you mine? A. Yes B. No

33. Do you have an environmental permit to operate from the Environmental Protection Agency (EPA)? A. Yes B. No

34. Do you use Mercury (Hg) in your activities? A. Yes B. No

35. If yes, how do you obtain it? A. I buy cash from a licensed dealer B. I buy cash from the market C. I obtain from dealers in exchange for gold output
D. Other (specify) ----- 36.

If no, what chemical do you use in place of Mercury (Hg)? -----

37. Do you know who to contact in trying to register for a license to operate?

A. Yes B. No

38. If yes, who is the first to contact in registering for a license? -----

39. Do you know there exist a District Centre in charge of small scale mining in Bolgatanga?

A. Yes B. No

40. Have you started the process to obtain a license? A. Yes B. No

41. If no, why haven't you? -----

42. If yes, what stage have you reached?

- A. Cartographic / Cadastral search
- B. Submission of License Application
- C. Pre-License Site Inspection
- D. Publication of Application
- E. Obtaining an Environmental Permit

- F. Offer Letter / Payment of stipulated fees
- G. Signing of License Agreement
- H. Awaiting final approval by sector Minister
- I. Registration of License / Awaiting issuance of Operating Permit
- J. Other (specify) -----

43. Do some influential people (example, landowners, chiefs, politicians etc.) facilitate your activities? A. Yes B. No

44. If yes, what role does he/she play? -----

45. Do you have unofficial arrangement with influential community people allowing you to operate? A. Yes B. No

46. If yes, what form does this arrangement take? A. Monetary payment
B. Gold output rewards C. Funding community projects D. Other
(specify) -----

47. Do you have unofficial arrangement with government officials (example: staff of Minerals Commission, EPA, Assembly, Forestry Services Division etc.) allowing you to operate? A. Yes B. No

48. If yes, what form does this arrangement take? A. Monetary payment
B. Gold output reward C. Funding office operations D. Free lease of your own vehicle(s) to be used for patrols E. Other (specify) -----

E. How to encourage miners to regularize their activities

49. Are you willing to rehabilitate your mined site(s) when depleted? A. Yes
B. No

50. What do you reckon will go into rehabilitating the mined site? (Tick as many as applicable) A. Modern equipment B. Special technology and expertise C. Money
D. Extra labour E. Other (specify) -----

51. What should be done to encourage you rehabilitate areas you have mined? -----

52. What should be done to make regularization of small scale mining more attractive?

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APPENDIX II

INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSIONS IN GBANE AND SHERIGU ON REGULARISING SMALL SCALE MINING

1. How is land for small scale mining acquired in this community?
2. Are there conditions for grant this land for your operations? If yes, enumerate
3. Do you operationalise any of the existing license acquisition requirements? If yes, please enumerate
4. Have you started the process to obtain a license? If yes, what stage have you reached?
5. If no, why have you not started the process? Give reasons or mention factors for not acquiring a license
6. Do some influential people in the community (example; landowners, Chiefs / Traditional Authorities, Local politicians among others) facilitate your activities? If yes, how is this done?
7. What benefit(s) do they derive from facilitating your activities?
8. What should be done to encourage you regularize your activities?