

Challenges in Implementation of Policies on Small-Scale Gold Mining in Ghana – The Case of Gbane

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ABSTRACT <p>Small-scale mining is one of the activities that sustain rural livelihood in various parts of the world of which Ghana is not an exception. Yet, in Ghana, the majority of small-scale miners are involved in the illegal aspect of it. The purpose of this thesis is to identify the challenges faced in the small-scale mining sector of Ghana with regards to policy implementation.</p> <p>The method used was semi-structured interviews which were analyzed thematically to identify the challenges that oppose the implementation of policies on small-scale mining and to examine the factors that influence people's participation in illegal mining activities.</p> <p>The result revealed that some of the challenges that opposed policy implementation were conflicts, corruption, the penalty system, and lack of staff strength and budgetary constraint. The results also revealed that the factors that influenced people's participation include unemployment; poverty, high family dependence, and dysfunction institutions.</p> <p>The thesis, therefore, concludes that for policies to be effective, the state, citizens, and organizations must agree to work together in order to achieve a common goal through the dissemination of the right information and inclusion of everybody in the decision-making and policy implementation processes.</p>			
Keywords: small-scale, mining, policies, policy implementation			

PREFACE

I developed the interest in this topic when I began my master's programme in 2016 through the course, Sustainability and Natural Resources with a critical analysis of the existing natural resources in our various countries and how well they are being maximized at the expense of the environment. I, therefore, wrote an essay on "Enforcing Policies to help Minimize the Negative Effects of Illegal Small-Scale Mining on the Environment in Ghana". My interest increased further when the newly elected president of Ghana, Nana Akufo-Addo, declared that he was going to put an end to illegal small-scale gold mining in Ghana when his government recently announced the establishment of a policy framework known as the Multilateral Mining Integrated Project (MMIP) whose aim will be to integrate the various policy initiatives in the mining sector to address the risk of illegal small-scale gold mining in Ghana.

The illegal activities of small-scale gold mining have been on the rise in Ghana. Therefore, I will be writing my thesis on challenges in implementation of policies on small-scale mining, the case of Gbane. My focus will be on Ghana since that is where I come from and I am quite familiar with the issue of illegal small-scale gold mining. Mainly, I will focus on the critical examination of existing policies as well as the existing laws that regulate the activities of small-scale mining of gold in Ghana. Furthermore, I will also look at the effects of illegal small-scale gold mining and why it continues to increase even though there are policies and laws that regulate small-scale gold mining.

I am very grateful to God for His grace, strength, and favor to be able to complete this thesis. My profound gratitude goes to my supervisors Professor Juha Kotilainen and Dr. Sabaheta Ramcilovic-Suominen for their guidance and assistance offered to me at every stage and phase of this thesis. Lastly, I want to thank my family in Ghana and Finland for their constant support and encouragement. My most sincere thanks go to my parents for their prayers. To my lovely husband and wonderful kids, thank you for your unlimited support. Without you, I would not have come this far.

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ACRONYMS AND ABBREVIATIONS

AD	Anno Domini
CT	carat
CENFAD	Center for Alternative Development
DISEC	District Security Committee
DCE	District Chief Executive
EAP	Environmental Action Plan
ECOWAS	Economic Community of West African States
EIA	Environmental Impact Assessment
ERP	Economic Recovery Programme
EPA	Environmental Protection Agency
FEF	alias of an interviewee in the study
GPRS	Growth and Poverty Reduction Strategy
ICLEI	International Council for Local Environmental Initiatives
LI	Legal Instrument
MC	Minerals Commission
MMIP	Multilateral Mining Integrated Project
MT	metric tons
NDA	Northern Development Authority
NEP	National Environmental Policy
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NLP	National Land Policy
NREG	Natural Resources and Environmental Governance
OZ	ounce
PMMC	Precious Mineral Marketing Corporation
PNDCL	Provisional National Defence Council Law

REGSEC	Regional Security Committee
SADA	Savannah Accelerated Development Authority
SAP	Structural Adjustment Programme
SSS	Senior Secondary School
UN	United Nations
UNEP	United Nations Environmental Program
WCED	World Commission on Environment and Development

1 INTRODUCTION

1.1 Background of the Study

Mineral deposits can be found almost in all parts of the world. Minerals such as gold, bauxite, crude oil, and diamond are considered as the major natural resources that contribute tremendously to the development and economic growth of a country.

Globally, gold is one of the precious minerals that have high economic benefits in the extractive industry. According to Hauptmann & Klein (2009), gold mining has been in existence for about 7000 years. The mining of gold is done both in large and small-scales internationally, nationally and locally. In this regard, the World Gold Council (2018) identified China as the world's leading producer of gold in 2017 with 429.4 tons representing 13% of total production globally.

In sub-Saharan Africa, South Africa is the leading producer of gold in the continent (Plowden et al., 1999). However, besides South Africa, there are other main producers of gold including Ghana. Mining is one of the backbones of the economy of Ghana aside agriculture (Aryee, 2001). Ghana has since the 1940s been mining gold and trading it on the international market. The sale of gold contributes largely to the economic development as well as the social development of the country such as the construction of roads, hospitals, schools, and housing. The Ghana Statistical Service report of January 2015 estimated that mining accounted for about 9.1% of Gross Domestic Product (GDP) of the country in 2014 (Ghana Statistical Service, 2015). However, in order to see the progress of the economy's reflection in the lives of many Ghanaians, an attempt has been made by a growing number of people to escape poverty thereby leading to an increase in the migration of people to the rural areas to practice small-scale mining as a promising and immediate income relief (Hilson & Potter, 2003).

In this regard, Davidson (1993, p.316) is of the view that "small-scale mining has become the principal livelihood for millions of miners and their families and the mainstay of local rural economies in diverse areas of the world". Therefore, small-scale mining exists in all parts of the world but is specifically dominant in South and Central America, and developing countries in Oceania, Africa and Asia (Hentschel, 2003, p.17). Small-scale mining in Ghana was discovered in the 15th century (Crawford et al., 2015, p.3) and was traditionally known as artisanal gold mining based on the fact that it was an indigenous activity that involves the use of equipment that are simple such as pick axes, drain boards and shovel. However, small-scale mining is still being

referred to as artisanal gold mining and still involves the use of these simple equipment, but this evolved over time to the use of sophisticated equipment such as washing plants, excavators and bulldozers as well as techniques resulting in the expansion of small-scale mining in every part of the country (Mineral Commission, 2015).

After the legalization of small-scale mining in Ghana in 1989, for the past 29 years, the majority of small-scale miners still operate illegally in the mining sector (Minerals Commission, 2015). This form of mining is locally referred to as *galamsey*, which means to gather the gold and sell (Ayamba et al., 2017; Hilson et al., 2007). In order to understand this more clearly, legal small-scale mining refers to operating with a license whiles “Illegal” small-scale mining refers to operating without a license. Therefore, miners who operate without a license are known as “illegal small-scale miners” (Teschner, 2013). The activities of illegal small-scale miners are itinerant in nature, revolves around quick abandoning of overexploited sites without reclaiming mined pits and trenches; operatives disobey regulations, and activities are carried out in far-off areas and activities are well out of reach of authorities (Hilson & Potter, 2003).

In recent years, the destructive nature of their activities has been criticized within the local press mainly because of the destruction of the environment and also in the increasing number of children who drop out of school in various rural areas to engage in this activity (my joy online, 2017). Hilson & Potter, (2003) are of the view that 85 percent of small-scale miners operate illegally in the country and because of their quest to get rich quickly have chosen not to make it legal. They further added that the majority of small-scale miners operate illegally because procedures established for the acquisition of license are complicated. In addition, Yakubu (2002) explained that the unemployment rate of the youth is also a contributing factor to increased activities of illegal small-scale mining in the country. To emphasize his point, he stated that “in 1997 the Ministry of Labour and Employment estimated that between 150,000 and 200,000 school leavers enter the labour market every year... In view of the low capacities of the public and private sectors to absorb their numbers, illegal mining becomes the most attractive alternative because of perceived remuneration they expect to get” (p.7). Therefore, the aim of this study is to identify the issues aside from the ones stated above that draw people to illegal small-scale mining. The aim of this study also relates to policies and laws that regulate the activities of small-scale mining in Ghana and identifying the challenges that oppose their implementation.

1.2 Problem Statement

In many countries, small-scale mining is a big and thriving business due to an increase in population and the unavailability of other sources of income. According to Telmer & Veiga (2009), small-scale mining is practiced in more than 70 countries in the world with a minimum of 15 million people directly employed and more than 100 million people indirectly employed globally. Thus, the activity has been able to mitigate poverty in many rural areas in developing countries. This is because it is feasible in such areas and requires minimal infrastructure, employs low tech operation which does not require the presence of technical staff, and employs workers who are least educated and poor as well (Hilson, 2002c). According to (Jennings, 1999) small-scale mining serves as a source of livelihood directly or indirectly to an estimated population of about 30 million people. The engagement in small-scale mining increases the perception of getting rich quickly and the social-economic benefits that come with it and also perceived to pay more compared to farming and construction work (Hilson, 2002a).

Small-scale mining as a source of employment has improved the living standards of people through the increased income levels, reduced rural-urban migration and as well reduced suicides and crime rates in regions where it is practiced (Amegbey et al., 1997). From an employment perspective, some countries in South America and Asia have very high numbers of people involved in the activities in small-scale mining. For example, in China an estimated number of 6 million people work as miners at small-scale coal mines (Hilson & Potter, 2003) while in the Philippines, 100,000 small-scale miners are estimated to be involved in the extraction and processing of gold in the Mount Diawalwal on the Island of Mindanao (Hollaway, 1997). In Brazil, small-scale mining serves as a source of employment and as a source of economic gains for 500,000 or more people (Meech et al., 1998). Aside from the economic benefits that come with small-scale mining, it has been shown to have some negative social effects. Veiga & Hinton (2002) argue that, with an increase in employment and finances in the rural communities, there is an increase in social vices such as alcohol abuse, gambling, drugs, prostitution, leading to diseases and deterioration of moral norms within mining operated communities.

In as much as the positive benefits of small-scale mining are enjoyed by the people who engage in the activity in these countries through the sales of the minerals found, the negative effects become a problem for the countries as well. One of such major issue is the destruction of the environment

mainly due “to primitive extraction and processing techniques, poor monitoring procedures, lack of financial resources and the scarcity of information needed to understand the impacts of their actions on the environment. As a result, the environment is subjected to pollution, deforestation, siltation, discoloration, dredging, and land sterilization from the use of mercury in mining activities”(Roopnarine 2006, p.119). Others include inadequate mine safety design resulting in the formation of craters that hold water for breeding diseases causing organisms and chemical contamination (Hilson, 2002c). Fundamentally, all these negative effects in one way or the other point to the fact that the majority of those involved in small-scale mining does not have what it entails to practice small-scale mining.

The activities of illegal small-scale miners have been on the rise in Ghana rendering the activities of legal small-scale mining unappreciated even though there are existing policies that regulate the activities of small-scale mining in the country. The impact and effects of these activities are greatly felt by the inhabitants that are located within the communities in which these activities take place.

It is for this reason that the study will critically examine the effectiveness of the policies that have been put in place to regulate small-scale gold mining in Ghana. The study would, therefore, provide insight into the policies and institutional frameworks of small-scale gold mining and also identify the underlying reasons that lead people to illegal small-scale gold mining.

1.3 Objectives of the Study

The main goal of the study is to assess the challenges in the implementation of policies on small-scale mining. For this reason, below are the objectives:

- To review the policies and laws regarding small- scale mining in Ghana.
- To investigate the challenges opposing the implementation of policies and laws on small-scale mining in Gbane.
- To examine the factors that influence people’s participation in illegal small-scale mining activities in Gbane.

1.4 Research Questions

Below are the research questions that will aid in achieving the research objectives:

- Why are the institutions and policies not effective in ensuring appropriate legal small-scale mining in Ghana?
- What are the challenges confronting the implementation of policies and laws on small-scale mining in Gbane?
- What are the factors that influence people's participation in illegal small-scale mining activities in Gbane?

1.5 Organization of the Thesis

This thesis is divided into six chapters. Chapter one deals with a brief background of mining and small-scale mining in Ghana and the world at large. It also deals with the reason why this research is being conducted by the statement of the problem, objectives of the research, research questions, and the organization of the study. Chapter two provides a theoretical framing related to institutions, policies and policy instruments. Chapter three deals with a general overview of the mining industry in Ghana. Identifying the types of mining being practiced and the stakeholders involved in the mining sector. Chapter four outlines how the research was conducted. It gives a brief description of the study area with particular attention to the demographic characteristics, social and economic activities. It also shows the methods employed in the collection of research data. Chapter five will be devoted to the analysis and discussion of the research data. Chapter six brings the research to an end through the drawing of conclusions and making recommendations.

2. INSTITUTIONS AND POLICIES: THEORETICAL PERSPECTIVES

2.1 The Concept of Institutions

This chapter explores the theoretical and conceptual framework on institutions and policies. In order to get a better understanding of institution, there is the need to define what an institution is, why it was established, and how it functions in various surroundings (Ostrom, 2005). Institutions are differently defined in different disciplines and fields of study. According to Ostrom (2005, p.3), institutions can be defined as “the prescription that humans use to organize all forms of repetitive and structured interactions including those within families, neighborhoods, markets, firms, sports leagues, churches, private associations, and government at all scales”. Miles et al. (2001, p.24) are similarly of the view that an institution refers to “constellations of rights and rules that define social practices, assign roles to participants in those activities and guide interactions among those who occupy those roles”. Again, Scott (1995, p.33) defined institutions as “consisting of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers [-] cultures, and routines and they operate at multiple levels of jurisdiction”. He further explains that cognitive, normative and regulative structures are intertwined to form a system that nature the social conduct of people. Also, Vatn (2015, p.78) is of the view that “institutions are the conventions, norms and formally sectioned rules of a society which provides expectations, stability and meaning essential to human existence and coordination as well as support certain values, produce and protect specific interests”. Moreover, North (1990, p.3) explains that “institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interactions”. He further explained that institutions serve as a communication tool among individuals. This rule of the game determines how efficiently the players of an organization will perform in a purposive activity despite these constraints. These constraints are instituted to identify the potentials available to people based on the choices they make and to define the existence of the organization. Similarly, Leroy & Arts (2006, p.7) explained that “the concept of institution marks the crossroads of the actor-structure duality” which emphasizes the position of the actor as well as the structure and the people in a confined setting. Equally, Hodgson (2006) defined institutions as “systems of established and prevalent social rules that structure social interactions”(p.2). He is also of the view that institutions shape and promotes uniformity in the behavior of humans by enabling well-arranged thoughts and creating unwavering opportunities.

The existence of institutions affects peoples' behavior. Behavior is affected when rules are set and followed, and behavior is promoted when a controlled behavior leads to choices and opened opportunities. From these broad perspectives, it is evident that in every aspect of life, there is a certain type of institution that is formed.

In this thesis, I will approach institution as “arena” and not as an organization. Therefore, the main focus of this thesis will be centered on institution as rules that regulate the activities of people as well as their interactions. In consonance to the definitions of North, Vatn, Hodgson, and Ostrom I approach institution as a system of instilling discipline in the society through locally invented laws and or nationally structured laws to monitor the activities within the society.

2.2 Types of Institutions

Within the social domain, different types of institutions are at play. The norms and the rules that exist in the church are different from the ones which exist in the private organization, likewise, the rules that apply within a family setting are different from rules that are used in the extraction of a natural resource. In this regard, North (1990) classified institutions as formal and informal rules or constraints. These two are interrelated in the enforcement process. Helmke & Levitsky (2004) define formal institutions as “rules and procedures that are created, communicated, and enforced through channels widely accepted as official” (p.727). On the other hand, Brinks (2003, p.3) defined informal institutions as “socially shared rules, usually unwritten, that are created, communicated and enforced outside of officially sanctioned channels”. The formal rules consist of constitutions, laws, rules, and regulations while informal constraints include taboos, customs and a set of behavior which is identical to the group of people in a particular society. These informal constraints are linked to the behavior of people and how they behave in their daily life (North, 1990). The informal constraints are also rules that are not written down but are effective and are being used by the inhabitants in a society or a particular country (Ibid). For example, environmental degradation has become an issue all over the world. Even though various measure has been put in place to minimize the rate at which environmental pollution happens, it is still degrading. Among others, formal and informal rules or constrains are put in place to coordinate human behavior and lead to possible solutions to the over-exploitation of the environment by humans.

Vatn, (2015, p.6) classified institutions as “conventions, norms and external sanctions”. He further indicated that conventions are the consistencies in correlating behavior where a single behavior is adapted to dealing with an issue while neglecting others even though they may also have the same solution to the issue. He also explained that norms are based on values that distinguish between what is correct and erroneous behavior. Norms are the way humans treat one another. Vatn’s definition of external sanctions deals with the formal rules and regulations that are established by a state in terms of constitutions, civil laws, right to resources and property rights. These rules play a significant role in the behavior of people who disagree towards the use of a common good. Similarly, Scott (1995) also classified institutions as cognitive, normative and regulative structures of which he emphasized that they are the “three pillars of institutions” (p.34). Even though the cognitive and normative pillars are very important constituents when dealing with institutions, he expresses that the majority of scholars stress the importance of the regulative institutional pillar. These scholars are of the view that the regulative pillar is the mainstay of institutions. Fundamentally, Scott (1995) explains that the regulative pillar formulate a regulative process to ensure that institutions regulate behavior through the setting of rules to direct the path of behavior; monitor the progressiveness and effectiveness of the rules; and institutes rewards or punishments as forms of sanctioning behavior in an effort to have an effect on subsequent behavior. On the contrary, the main components of the regulative pillar are “fear, force and expedience” (p.36), but they are neutralized by the existence of formal rules or laws, or informal factors that shape the social mores of the community (Scott, 1995).

Institutions do not arise on their own but are created by human beings to regulate the interactions between groups of people and people’s behavior and use of natural resources, among others. In the context of this thesis, I will focus on institutions regulating peoples’ behavior in terms of using mineral resources and practicing of small-scale gold mining and I will also focus on formal rules and policies, unlike social norms and customs. According to Vatn (2015), there is a constant interaction between people and institutions, thus as he put it, people shape institutions and are equally shaped by these very same institutions. Therefore, the process involved in the creation of institutions may be classified as a continuous process from one generation to the other. In this regard, Berger & Luckmann (1991, p.68-79) identified three phases of the process of making institution: “externalization, objectivation, and internalization”. These scholars are of the view that “externalization and objectivation are moments in a continuing dialectical process. The third

moment in this process, which is internalization (by which the objectivated social world is retrojected into consciousness in the course of socialization)” (pp.78-79). They further explained that “human existence is, ab initio, an ongoing externalization. As man externalizes himself, he constructs the world into which he externalizes himself. In the process of externalization, he projects his own meaning into reality” (pp.121-122). Vatn (2015) explains that externalization refers to an individual’s self-created ways of doing things which is seen by others but solely peculiar to this individual. He also explains that objectivation refers to the adaption of an individual’s self-created ways of doing things by others who assume and are convinced that it is the way of actually doing things. Internalization, on the other hand, is reproducing the self-created ways of doing things in the societal context where all agree to the fact that there is a clear distinction between what is right and what is wrong. He refers to the internalization process as socialization (p. 84).

In order to understand institutions better, in the next subsection I will introduce the concept of policy, as an integral part of the institutional framework, regulating the societal affairs and policy domains.

2.3 Concepts of Policy

The functionalization of a society depends on the enacting of laws by governmental entities, the formulation of policies and the distribution of resources to benefit the populace within the society. According to Sterner & Coria (2013), policies do not thrive in an open space but encompass the complete policy environment which includes all phases of policy-making. In this regard, various researchers have explained what a policy is since there is no standard definition of policy. In view of this, Eccleston & March (2011, p.xliv) explained policy as “encompassing a set of basic principles and associated guidance, formulated and enforced by the governing body of an organization [both] governmental or private to direct or limit its actions in pursuit of long-term goals”. This emphasizes that a policy is a public declaration of the intention of a government in finding solutions to an identified problem. Furthermore, Birkland (2015) is of the view that policy is the political means that government uses to exercise power through the establishment of laws and regulations to deal with a particular issue for the benefit of the entire society. He explains further that a policy does not have a single form but exists in various forms. Nonetheless, Sterner & Coria (2013) expressed that the diverging nature of economic and political attentiveness serves

as the basis of policy formation. However, to place more emphasis on this point, Schneider & Ingram (1997, p.2) defined policies as “revealed through texts, practices, symbols, and discourses that define and deliver values including goods and services as well as regulations, income, status, and other positively or negatively valued attributes”. To explain further, the existence of policies is not only embedded in rules and regulations but aids in the allocation of benefits as well as deals with the implications of these benefits. Additionally, Birkland (2015, p.9) defined policy as a “statement by government of what it intends to do such as a law, regulation, ruling, decision, order, or a combination of these. The lack of such statements may also be an implicit statement of policy”. This definition indicates that the intentions of a government in solving public problems of all kinds at all levels is in the form of statements.

With all these definitions in perspective, there are various characteristics associated with the definitions above concerning a policy (Birkland, 2015). These characteristics are;

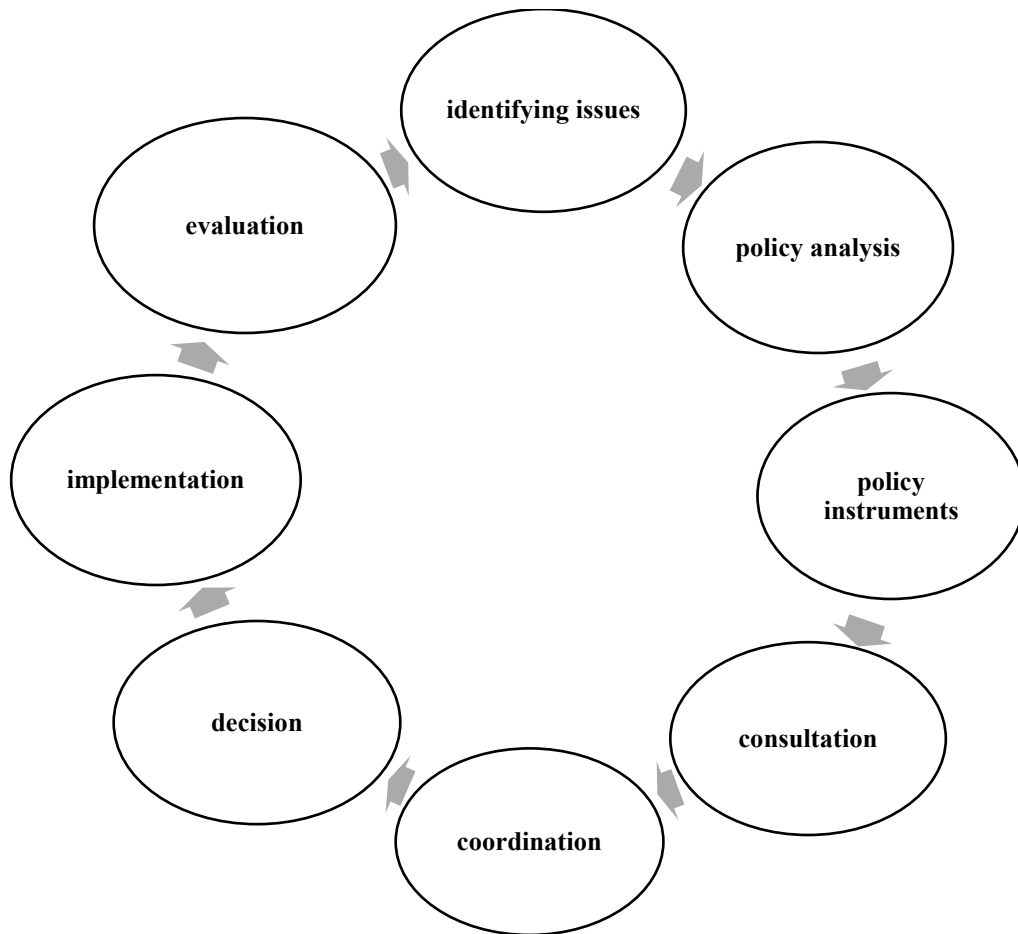
- ❖ Policy is geared towards a desired outcome.
- ❖ Policy is made for people within a particular society.
- ❖ Policy is made by governments and through deliberations between government and non-governmental actors.
- ❖ Policy is a plan or an action that both the public and the private sector enforce even though their motives and resolutions to an identified problem are divergent.
- ❖ Policy is a documented intention of a government to or not to do.

2.3.1 Policy Processes

The identification of a problem requires the devising of solutions to help solve the problem. The policy process is a systematic way of analyzing the development of policy. The policy process is sometimes described by scholars as the policy cycle. In this thesis, the policy process and policy cycle will be used interchangeably. The policy processes are geared toward finding solutions to an existing problem through the generation of ideas. It is for this reason that Birkland (2015) explains that a problem is an unwanted circumstance that people or a group of people find themselves and believe that governments through their actions can improve this situation. Consequently, the initiation of the policy process is greatly based on the arguments that, is the problem at hand solvable, are there any possible solutions to the problem, how much do these solutions cost, and how effective will the solutions be (Ibid). Therefore, since the policy in itself affects an entire

society, the interest of the society should be considered during the policy process. The policy cycle is, however, an effective tool that divides intricate occurrences into stages that are easy to manage. Also, it ensures that existing knowledge is combined to achieve the desired policy outcome. Furthermore, it promotes policymaking as a process that surpasses a certain institution and not just as a set of institutions.

Fundamentally, Eccleston & March (2011) in their book, *Global Environmental Policy: concept, principles and practice* identified three broad stages of the policy process as awareness, policy focus and policy implementation (xlvii). However, they narrowed it down to five stages which include; agenda setting, decision making, policy analysis and evaluation, policy formulation and policy implementation (p.44). Likewise, Althaus et al. (2013) identified eight steps of the policy cycle from the Australian perspective which includes; “issue identification, policy analysis, policy instrument development, consultation, coordination, decision, implementation, and evaluation”(p.37). These stages in the policy cycle have various impacts on the policy process. Below is an illustration of the policy cycle by Althaus et al in figure 1.



Source: Adapted from Althaus et al., (2013)

FIGURE 1: The Policy Cycle

The policy processes identified by the various scholars above are of equal importance since one stage of the process leads to another stage. However, aside the formulation of policies, the next of importance in the policy process is policy implementation.

2.3.2 Policy Implementation

One of the most critical stages in the policy cycle is the policy implementation stage. According to Van Meter & Van Horn (1975, p.447), “policy implementation encompasses those actions by public and private individuals (or, groups) that are directed at the achievement of objectives set forth in prior policy decisions”. Also, Williams (1971) clearly expresses policy implementation as a way that “seeks to determine whether an organization can bring together men and material in a cohesive organizational unit and motivate them in such a way as to carry out the organization’s

stated objectives”(p.144). Fundamentally, policy implementation is the process of achieving the desired objectives that have systematically been outlined by a government to solve societal issues. For a proper execution of a policy, the policy implementation process must include a series of activities such as specification of goals and objectives; issuing and enforcing directives; allocation of funds; formation of commission and committees; recruitment of personnel, discharging of duties and responsibilities; and making of short-term decisions (Grindle, 2017; Nweke, 2006). Gunn, 1978 cited by Althaus et al. (2013) also identified ten conditions in order to achieve perfect policy implementation. They include “no crippling external constraints; adequate time and resources; a suitable combination of resources at each stage; a valid theory of cause and effect; a single implementation agency, or at least a dominant one; understanding and agreement on the objectives to be achieved; a detailed specification of tasks to be completed; perfect communication and coordination; and perfect obedience” (p.169).

Accordingly, the success or failure of a policy is determined by how effective the implementation process of the policy will be. However, Van Meter & Van Horn (1975) are of the view that the type of policy to be implemented will determine the implementation process to be used since the implementation processes differ. Many negative societal issues have evolved as a result of failed policies which were not effectively implemented (Ikelegbe, 2006). Therefore, since the environment is one of the areas that require policy formulation as well as policy implementation, environmental policy will be discussed in the next section.

2.4 Environmental Policy in Perspective

Environmental policy is based on two significant terms, namely, environment and policy. The environment, on a broad perspective, refers to the physical network that incorporates the social and economic dimensions. Environmental policy, therefore, stresses identifying human actions on the environment. For this reason, Eccleston & March (2011) explained that environmental policy is a process that encompasses values and communal goals that are created to promote and protect the natural and artificial environment that is beneficial to humankind.

Globally, the emergence of environmental policy dates as far back as after World War II (Eccleston & March, 2011). Environmental policy originated from the United States in 1960 and has widely been adopted by various countries around the world (Ibid). The environmental policy enactments were based on the concerns put forward by the environmental movement towards the preservation

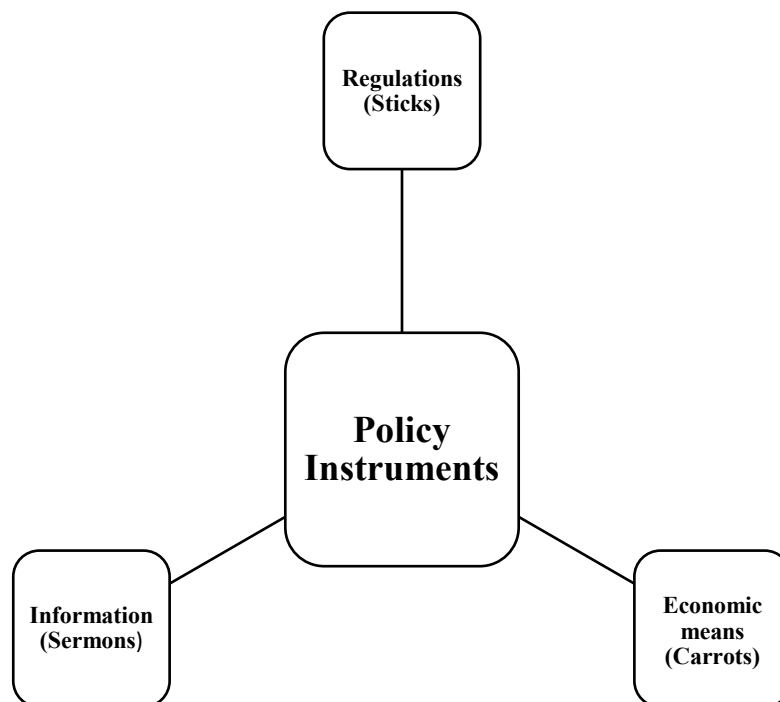
and conservation of the environment as well as the instigation of change of attitude towards air, land and water pollution. In this regard, the National Environmental Policy Act (NEPA) was officially enacted as the world's first environmental policy. In light of this, other organizations followed suit after the positive impacts of NEPA (Ibid). Therefore, in 1972, representatives of various governments attended the United Nations Conference on the Human Environment which was organized in Sweden's capital city, Stockholm to deliberate on the state of the global environment (Ibid). This resulted in the formation of the United Nations Environmental Program (UNEP) which is internationally responsible for observing and assessing the environment based on the activities of humans (Ibid).

2.5 Environmental Policy Instruments

Howlett & Ramesh (1993, p.4) are of the view that “policy instruments are tools of governance. They represent the relatively limited number of means or methods by which government effect their policies”. Therefore, environmental policy instruments can be classified into three; the market-based instrument (carrots), the conventional approach (sticks), and the information-based instrument (sermons) (Bemelmans-Videc et al., 2011; Howlett et al., 1993; Jordan et al., 2003; Liao, 2018). According to Stavins (2003, p.358), “market-based instruments are regulations that encourage behavior through market signals rather than through explicit directives regarding pollution control levels or methods”. This form of instrument is a way of boosting firms or organizations to consciously enforce measures that will aid the reduction in pollution as a result of exploitation within the environment to meet their own interests as well achieve the targets of an implemented policy. Examples include subsidies, awards, taxes and tax abatements (Steurer, 2010). Alternatively, the conventional approach which is widely known as the “command-and-control” (Liao, 2018) is a regulation that sets equal standards for firms to comply with in order to achieve a goal creating little or no room for flexibility towards the achievement of the intended goal. Examples include directives, regulations, and laws (Steurer, 2010). On the other hand, Liao (2018, p.1113) stated that “the information-based instrument is an informal regulation and does not have mandatory enforcement requirement”. However, Jordan et al. (2003) and Steurer (2010) are of the view that these informal regulations serve as a chamber for providing knowledge which may have an impact on choices being made by a group of actors. The adoption of this instrument will require the voluntary participation of the state, organizations and the citizens to ensure an effective implementation of this instrument. The main idea of this instrument is to promote the

provision of information by organizations whose activities may or may not have effects on the environment. Examples of the information-based instrument include campaigns in the form of printed materials such as bulletins, brochures, pamphlets, and fliers for advertisement and education; and training (Bemelmans-Videc et al., 2011; Steurer, 2010).

The figure below shows Bemelmans-Videc et al. categorization of policy instruments as a threefold topology.



Source: Adapted from Bemelmans-Videc et al. (2011)

FIGURE 2: The Policy Instruments

2.6 Institutional Infusion in the Small-Scale Mining Sector

In the previous section, various scholars identified formal and informal institutions as the two main types of institutions. Even though my main focus of this thesis is a review of formal institutions, in order to understand the conditions that lead to illegal small-scale mining, there is the need to focus on informal institutions as well. Small-scale mining requires the creation of institutions to help monitor the activities carried out. It is for this reason that in Ghana, institutions have been enacted to ensure successful operationalization of the small-scale mining sector.

In this regard, policies were enacted with outlined objectives to promote and control the activities in the mining sector. For this reason, the most used policy instruments are the market-based instrument and conventional approach. These two instruments make use of laws and regulations to check the attitudes and behavior of individual in relation to the extraction of the mineral, management of the environment, and instilling discipline to those who go contrary to the law as well as the use of taxation as a means of generating income for the country.

In the next chapter, the extractive industries in the mining sector will be discussed to channel the focus of this thesis.

3 THE MINING SECTOR OF GHANA

3.1 Types of Mining

Mining is the extrication of treasured resources from the earth. According to Warhurst & Noronha, (1999), mining is defined as a process of excavating and channeling particles that are extracted from the ground to be able to discover the various components of the extracted material.

Gold, diamond, timber, bauxite, and crude oil deposits are some of the natural resources that can be found in Ghana. According to Amankwah & Anim-Sackey (2003), the presence of these natural resources has led to significant economic growth and development. In the previous decades, gold accounted for 90% of all the mineral proceeds (Government of Ghana, 2010). However, the production of gold began to decline between 1960 and 1983 but not bauxite, manganese, and diamond. This decline was as a result of inadequate functioning infrastructure, outmoded plants and equipment, inadequate balances between the cost of production and incomes generated as a result of misestimation of the locally used currency, as well as the skills employed by the personnel.

Below is a graph showing the decline of gold from 1960 to 1983.

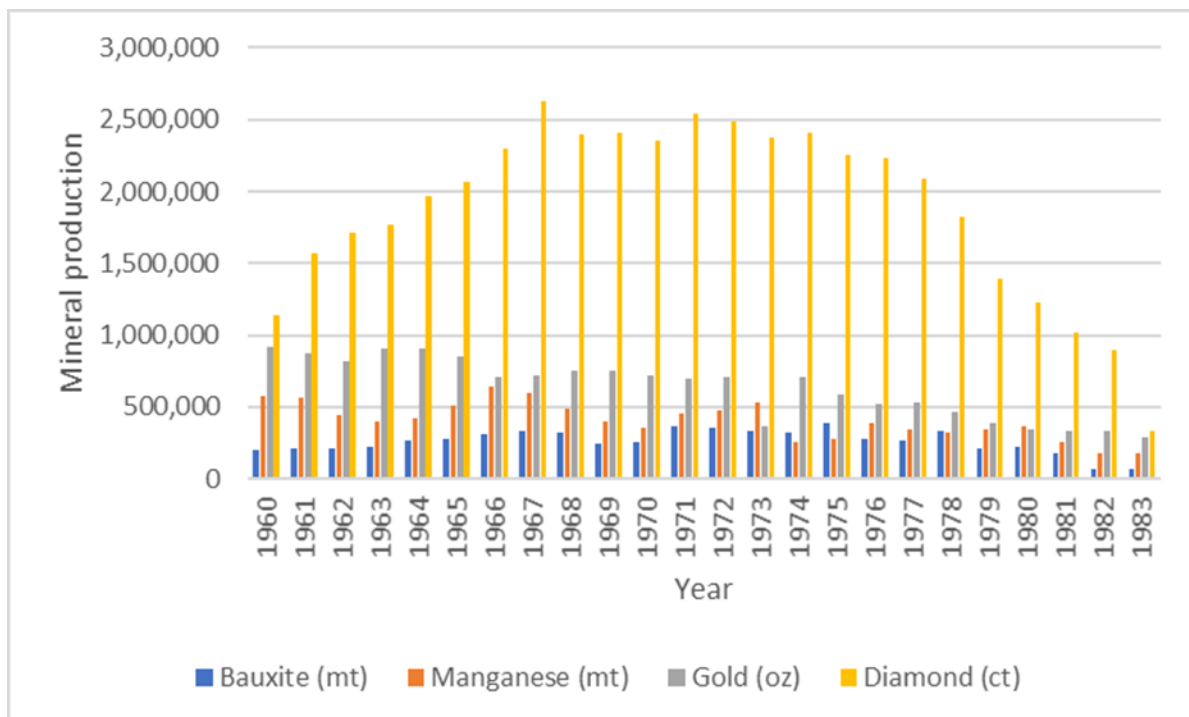


FIGURE 3: Decline of gold production from 1960 to 1983 (Government of Ghana, 2010)

The decline in the production of gold did not boost the economy of the country between 1960 and 1983 (Hilson, 2002b). Therefore, in the latter part of 1983, the government of Ghana instituted the Economic Recovery Programme (ERP) to resuscitate the major sectors that generated revenue for the country including the mining sector (Amponsah-Tawiah & Dartey-Baah, 2011). The aims of the ERP were to regulate and stabilize the exchange rates of the cedi, to ensure that companies are able to pay their workers and support their operations with earnings from their foreign currencies, and to dissolve non-profitable companies within the state (Amponsah-Tawiah & Dartey-Baah, 2011; Hilson, 2002b; Government of Ghana, 2010). In order to resuscitate the economy, the mining sector was recognized as one of the major sectors to achieve this. Therefore, at the beginning of 1984 to 1995, certain laws and institutions were developed and enacted to regulate and promote activities in the mining sector. These include the minerals and mining law; the Minerals Commission; and the Environmental Protection Agency (Amponsah-Tawiah & Dartey-Baah, 2011). These laws and institutions were geared towards the two groups of miners operating in the mining sector in Ghana and also to make significant economic changes in the economy of the country.

In Ghana, the two types of mining are large and small-scale mining. Large-scale mining is described in terms of the use of large equipment in accessing the ore and its processing to get the gold for subsequent refining. Individuals involved in this type of mining are trained engineers and professionals. The activities of large-scale mining are usually legal since they go through the appropriate authorities to acquire licensing and permission to operate. Small-scale mining on the contrary, according to PNDCL 218, section 21 of Ghana, is the “mining of gold by any method not involving substantial expenditure by an individual or group of persons not exceeding nine in number or by co-operative society made up of ten or more persons” (Government of Ghana, 1989c, p.5).

Progressively, the incorporation of the institution and the laws enacted into the large and small-scale mining sectors led to a boost in the mining sector from 1990. Below is a graph showing progress in the production of gold from 1990 to 2014.

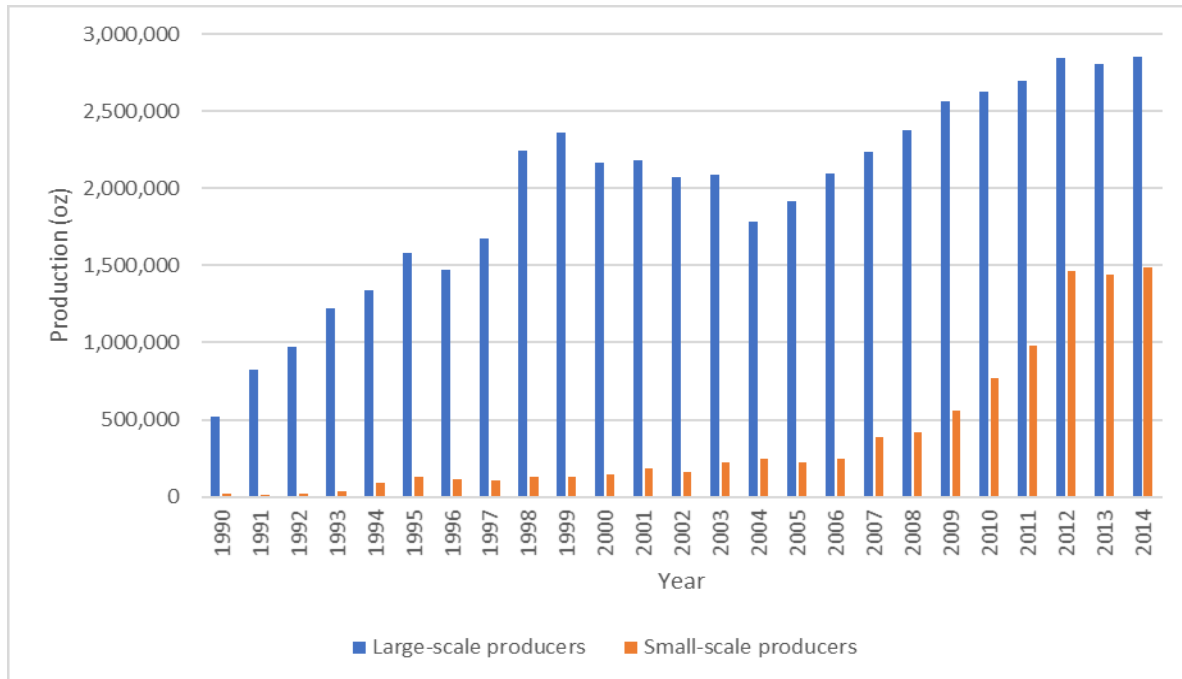


FIGURE 4: Progress of gold production (Minerals Commission, 2015)

In as much as both the large and small-scale mining sector have contributed to the economic development of the country, the next section will delve into the discussion of the small-scale mining sector in Ghana since it is the main focus of this thesis.

3.2 Small-Scale Mining in Ghana

According to Hilson (2001), the existence of small-scale mining in Ghana is over 2000 years. In this regard, one of the main characteristics was winning activities and alluvial gold extraction that attracted Arab traders between the 6th and 8th century AD (Ibid). The popularization of the existence of gold in Ghana became high with the arrival of the Europeans in 1471 (Brown, 1964). Brown further explained that the first Europeans to arrive in Ghana and settled in a town called Edina in the central part of Ghana were the Portuguese. It was the Portuguese who coined the name ‘Gold Coast’, the former name of Ghana, due to the large deposit of gold in the area. The discovery of this precious mineral commenced the commercial scale gold mining by the British in the 19th century (Tsikata, 1997). After the commercialization of gold by the British, the majority of European countries found their way to the Gold Coast (Ofosu-Mensah, 2017). This was as a result of less gold supply in the European continent due to unavailability (Hilson, 2002b).

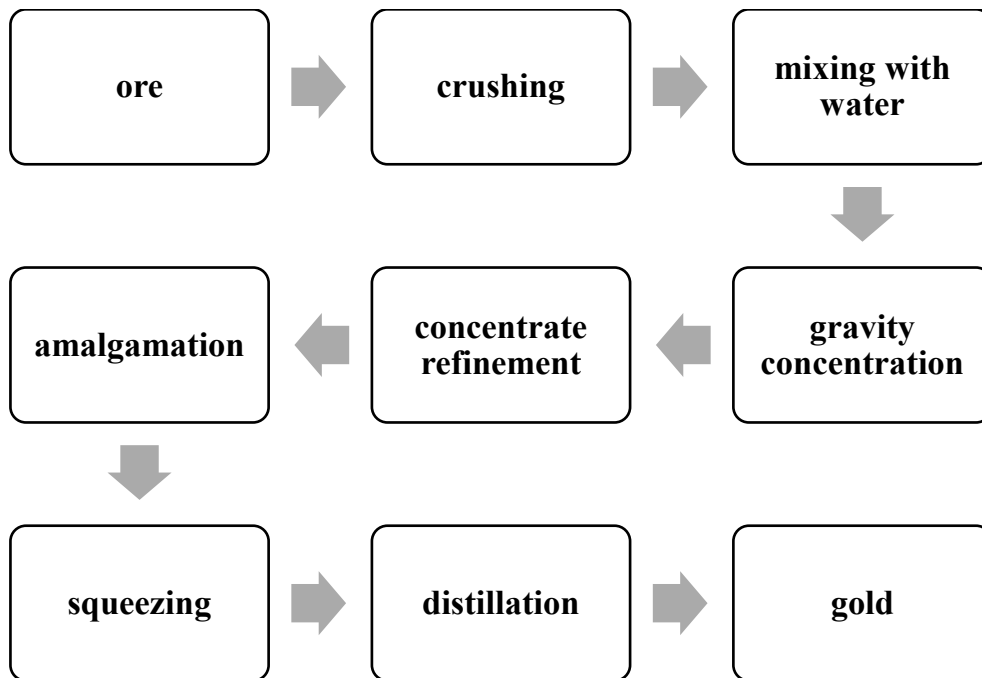
According to Hentschel (2003, p.5), “small-scale mining refers to the mining by individuals, groups, families or cooperatives with minimal or no mechanization, often in the informal (illegal) sector of the market”. Primarily in Ghana, small-scale mining is referred to as “operations of individual Ghanaians or organized groups of Ghanaians (4-8 individuals), or cooperative of 10 or more individuals, which are entirely financed by Ghanaian resources at certain limit and carried out on full time basis using simple equipment and tools” (Hentschel 2003, p.5). Small-scale mining in Ghana can be categorized in two forms namely; legal small-scale mining and illegal small-scale mining (Teschner, 2013). The legal small-scale miners operate by obtaining licenses from the government through the Minerals Commission. Usually obtaining licenses to operate is tedious and takes a long time, therefore, others operate illegally without permits or licenses. According to Adu et al. (2016), the Ghana Academy of Sciences projected that in Ghana there are more than 150,000 small-scale miners, of which the majority are illegal operators and perform their activities on restricted areas or lands that belong to large-scale miners. Illegal small-scale miners are known to produce about 10% of gold in the country, thus making the activity lucrative with more people getting involved (Akosa et al., 2002; Aryee et al., 2003). Akosa et al. (2002) identified amalgamation, cyanidation, handpicking and roasting of ore as the techniques employed by the illegal miners in their activities. Amalgamation was identified as the main technique used by small-scale miners because of the easy extraction of the required materials (Ibid). This technique involves the use of mercury to form an amalgam of gold by mixing it with concentrates of gold (Aryee et al., 2003). Heat is then applied to enhance the separation of the gold for easy collection for sale. Individuals involved in this type of mining are usually not trained and therefore lack the expertise, knowledge, and equipment required for proper and safe mining leading to devastating effects on the environment and the populace at large.

3.3 Methods of Extraction and Processing of Gold in Small-Scale Mining in Ghana.

There are various methods employed in the processing and extraction of gold in small-scale gold mining depending on the locality and the technology available. Factors that influence the extraction and processing are mainly the amount of money available to the miners and demand for the mineral over a period. Therefore, Aryee et al. (2003) categorize and explains these extraction methods into three, thus, hard rock underground method, shallow alluvial method, and deep alluvial method.

The alluvial methods which include the shallow and deep are common methods usually relied on by small-scale miners to acquire gold. This method of gold extraction was in existence prior to the arrival of the technology introduced by the Europeans (Hilson, 2002a). This form of mining does not require stripping, drilling, or blasting (Warhurst & Noronha, 1999).

It involves natural crushing and grinding of the ore which occurs over a long period of time. The powdered materials are then transported by the river or rainwater and deposited in river beds or near river banks (Ofosu-Mensah, 2017). These gold deposits are usually discovered when the rivers dry up or when the vegetation around the river banks is cleared. The sand containing ore is taken into baskets and washed (sluiced) continuously until the ore is concentrated (Aryee et al., 2003). Thereafter, intense ore is poured onto a blanket or a piece of material that is placed in a sloping position to allow other impurities to run off but also traps the gold ore onto the material (Veiga & Hinton, 2002). The resultant ore is then scraped off and the pure gold formation begins through the process of amalgamation where a very little amount of mercury is added (Ibid). Any amount of mercury deemed in excess is drained off and the resultant amalgam is maintained at a very high temperature to further remove residual mercury leaving behind cured and unrefined gold (Ibid). Below is a diagram showing the processes involved in the extraction of gold using the alluvial methods.



Source: Adapted from Babut et al., (2003)

FIGURE 5: Process of gold extraction and production (Alluvial process)

On the other hand, when the ore-bearing rocks lie deep beneath the surface of the earth hard rock underground mining method is employed. Fundamentally, this method involves the exposure of the gold-containing rocks by removing the vegetation or the topsoil (Aryee et al., 2003). The rock is chipped with a hammer and chisel (Amegbey et al., 1997). However, to ensure safety within the tunnel, this method further requires the use of vertical shafts and tunnels excavated to connect the earth surface to the underground mineral-bearing rocks (Aryee et al., 2003). Even though blasting is forbidden, these vertical shafts and tunnels are excavated by drilling and blasting after which the loose rocks are transported to the surface for processing into mechanically or manually grounded fine powder or disposed of as waste materials (Amegbey et al., 1997). Heap-leaching or amalgamation is employed to separate the gold from the other particles when the powder is washed. Heap-leaching is used by well-established corporations, and it is usually appropriate for low-quality rocks (Warhurst & Noronha., 1999)

3.4 Legal framework of Small-Scale Mining in Ghana

The government of Ghana established several enactments to make small-scale mining legal in the country. These include: the 1992 Constitution of the Ghana, the Mineral and Mining Law of 1986 (PNDCL 153), the Small-Scale Gold Mining Law of 1986 (PNDCL 218), Mercury Law of 1989 (PNDCL 217) and the Precious Mineral Marketing Corporation Law of 1989 (PNDCL 219) (Crawford et al., 2015; Minerals Commission, 2015). The mercury law legalized the purchase of mercury from authorized dealers for gold recovery purposes (Government of Ghana, 1989a) and the Precious Mineral Marketing Corporation Law of 1986, creates an avenue for the purchase and sale of gold and diamonds (Government of Ghana, 1989b). These regulatory bodies are mainly responsible for regulating the activities in the mining sector of the country, most especially, small-scale mining. Also, a few acts have been put in place towards the protection of the environment and towards the regulation of mining activities, especially, small-scale mining. The acts include Mineral and Mining Act of 2006 (Act 703), the Environmental Protection Agency Act of 1994 (Act 490), Water Resource Commission Act of 1996 (Act 552), and Mineral Commission Act of 1993 (Act 450) (Hilson, 2001; Minerals Commission, 2015)).

Furthermore, policies such as the minerals and mining policy of Ghana, national land policy, national environmental policy, and national water policy were also formulated to work concurrently with the laws in order to achieve a progressive small-scale mining sector (Minerals Commission, 2015). In the next section, some of the laws and policies on small-scale mining which are related to this thesis will be discussed.

3.4.1 Minerals and Mining Act 2006, (Act 703)

Before the existence of the Mineral and Mining Act of 2006 (Act 703), the Minerals and Mining Law of 1986 (PNDCL 153) was the main law that regulated the activities of mining in Ghana. There was also five other legislation that regulated the activities of the mining sector in Ghana. However, in 2006, the president and the parliament of Ghana decided to bring all the other laws under one umbrella by repealing the existing ones included the Small-Scale Gold Mining Law of 1989 (Government of Ghana, 2006).

According to the Minerals and Mining Act of 2006, the land and everything that is found on and within is entrusted into the hands of the President. Section (1) of this Act states that, “Every mineral in its natural state in, under or upon land in Ghana, rivers streams, water-courses throughout the

country, the exclusive economic zone and an area covered by the territorial sea or continental shelf is the property of the Republic and is vested in the President in trust for the people of Ghana” (p.5). However, since the President cannot carry out all the duties in the country, he, therefore, entrusts the mineral and mining sector to an appointed minister to take charge and to make decisions on his behalf. This is stated in Section 5(1) that “the Minister on behalf of the President and on the recommendation of the Minerals Commission may negotiate, grant, revoke, suspend or renew mineral rights in accordance with the Act” (p.6). In this regard, any mineral found in or on any part of the land requires by law, a license for the extraction of the mineral which is approved by the Minister in charge as a result of the powers vested in him or her by the President over the minerals. Furthermore, aside from the responsibility to issue out a license, the Minister is also entrusted with the responsibility of managing all the mineral resources in the country as well as the permitting of mineral rights and participation in policy-making (Government of Ghana, 2010).

In the Minerals and Mining Act, Section 81 to 99 deals with the activities of small-scale mining. Firstly, it requires and makes it compulsory for all mining operators to be licensed by outlining the requirements of an applicant. The person should be a Ghanaian not below 18 years and registered by the commission. This is to make sure that small-scale mining is made and preserved for Ghanaians and also prevent foreigners from competing with Ghanaians in that sector. This is to help guarantee employment opportunities for Ghanaians. Furtherly, the Act gives the duration of the validity of the license as 5 years and renewable for a certain period of time, based on the approval of the Minister. This provision would enable the Commission to keep a check on the number of operators in the system at each point in time and also to generate revenue for the state through the applications for renewal of licenses on a regular basis.

Progressively, the Act gives the Minister powers to revoke a license when the licensee has failed to comply with a requirement, or the licensee is convicted of any crime related to mining or the Minister deems it necessary to protect the interest of the public. This part gives excessive power to the Minister. Due to this, a malevolent Minister may apply it arbitrarily since anything may or could be in public interest. On the part of the license transfer, the Act enables a licensee to transfer the license only to a Ghanaian with the consent of the Minister. This is also to make sure that no foreigner gets into the small-scale mining sector.

The Act permits the Minister after consulting the Commission to designate an operational area for small-scale mining. It further empowers the Commission to set up district offices in areas designated for small-scale gold mining to be directed by the District Officer. The office is to organize a list of current and potential operators. This leads to making it compulsory for a mining operator or a prospective operator to register with the district office and that only registered operators can apply for licenses.

In this regard, the Act requires the setting up the Small-Scale Mining Committee to be chaired by the District Chief Executive (DCE) or his representative, the district officer, a member from the Commission and a representative from the EPA. The committee is to work closely with the district officer to ensure that areas designated for mining are used accordingly.

The Act also compels operators to adopt and apply rules for health and safety, responsible mining practices, and consider the effects on the environment. By this provision, the lawmakers wanted to make sure that the harmful effects of small-scale mining are controlled and not left unchecked. It also compels operators to pay compensation to landowners resolute by the Minister. This is very much in line with Article 20 on the constitutional provision that compensation should be processed in a speedy manner, equitable and satisfactory (Ghana's Constitution, 1992). On the use of explosives, the Act requires an operator to acquire written permission before he can use any explosives. The brain behind this provision is the prevention of the arbitrary use of explosives by people who may not be well equipped in the use of such explosives.

The Act also permits operators to purchase mercury in quantities needed for their operations. By this provision, what was used by the colonial administration to ban small-scale gold mining has been restored and that is the use of mercury. It further subjects the scale sale of minerals recovered to regulations prescribed by the Minister. This is a very important provision in the Act because this secures to the State maximum returns from the legalization of the small-scale mining activities.

Lastly, the Act prescribes the punishment for those who illegally mine or deal in minerals. They are penalized to pay three thousand penalty units or imprisoned between one to five years or charged with both for those who illegally deal in minerals and for those who contravene mining regulations are to pay a thousand penalty units or imprisoned between one to three years or charged to do both. In addition to these, the court can confiscate to the state the mineral in question. The use of penalty units in Ghanaian Legislation is new and this is to make sure that at any point in

time culprits are made to pay realistic sums of money as fines are unaffected by the time value of money.

3.4.2 The Mercury Act (PNDC 217)

The Mercury Act is an act that determines the possession and use of mercury. It also an act that authorized the acquisition of mercury from approved dealers for gold recovery purposes (Anon, 1989a) cited by (Amankwah & Amin- Sackey, 2003).

According to the Act, Section 4 deals with small-scale miners authorized to possess mercury. Section 4 (1) states that “despite anything contained in an enactment to the contrary, licensed small-scale gold miners may purchase from licenses mercury dealers a reasonable quality of mercury that may be shown to be necessary for the purposes of their mining operations” (p. v-4102). The Act further states in section 4(2) that, “small-scale gold miners shall observe good mining practices in the use of mercury for carrying out mining operations” (p. v-4102).

This section of the act requires that anyone in possession of mercury should be a licensed small-scale miner and should be ready to prove with a document that makes it legal for the person to possess it. The purpose of this act is to ensure that those who possess mercury use it in a wise and effective way to protect human lives and that of the environment.

3.4.3 Environmental Protection Agency Act of 1994 (Act 490)

The Environmental Protection Agency Act led to the establishment of the EPA. This Act lays down specific rules for the governing of the environment through the roles of the EPA. The protection of the environment is the main concern of the EPA. Therefore, EIA is a prerequisite for the implementation of a project (Government of Ghana, 1994). EIA determines which aspect of the project needs the most attention among many projects to channel resource to that particular area than to tackle the issue on a general view (Ibid). Furthermore, the sustainable use of natural resources is what EIA provides. The natural resource may be in abundance but when it is not managed well it turns to deplete. Therefore, sustaining the natural resource for future generational use is highly promoted by EIA (Ibid).

EIA does a thorough check on how positively or negatively a proposed project will have on the natural resources within the geographical location assigned for the implementation of the project (Ibid). Also, through EIA, the protection of human health is increased, and risks of environmental

disasters are minimized. Finally, EIA increases government responsibility through the establishment and enforcement of rules and regulation to protect the environment and the lives of humans as well (Ibid). In the nutshell, this act promotes the agendas of EPA through EIA for effective protection of the environment and implementation of projects.

3.4.4 Minerals Commission Act of 1993 (Act 450)

The Minerals Commission Act led to the formation of the Minerals Commission (MC). The Act outlines the functions of the MC. The MC and the Minister that oversees the natural resources in the country work closely together. One of the major roles of the MC is to discuss issues related to minerals in the country with the Minister by giving the necessary advice needed (Government of Ghana, 1993). Furthermore, the MC is obligated to monitor how effective policies related to mining has been implemented (Ibid). Also, the MC is responsible for monitoring its operations and that of other organizations who are also tasked with responsibilities related to minerals in the country. The purpose of this act is to serve as a guide which contains outlined principles and objectives to be implemented by the MC in order to ensure effective utilization of the mineral resources within the country.

In the next sections, policies related to the small-scale mining sector in Ghana will be discussed. These policies include the mineral and mining policy of Ghana, the national environmental policy, the national water policy, and the national land policy. These policies are interrelated when dealing with the activities of mining which does not exclude the small-scale mining industry.

3.4.5 The Minerals and Mining Policy of Ghana

The minerals and mining policy is a written document that serves as a guide for the government of Ghana towards the proper management of the extractive industries in the country especially the gold mining sector. Before the existence of the mineral and mining policy, numerous programmes and documents such as the 1992 Constitution of the Republic of Ghana which was amended in 1996; the Better Ghana Agenda; the Draft Medium-Term Development Plan; strategies and policies drafted under the Natural Resources and Environmental Governance (NREG) Programme; and the Ghana Growth and Poverty Reduction Strategy (GPRS II) were created to improve the growth of the economy and to make the living standard of Ghanaians a quality one (Government of Ghana, 2014). However, these documents and programmes were unable to achieve the purpose for which they were created to the full capacity.

Therefore, these programmes and documents were incorporated together to form a single policy document in order to ensure that the mining industry will continue to contribute to the financial development of the country. In order to do this, various objectives were derived in order to achieve this goal. These include: “diversify the country’s export base and thereby increase foreign exchange earnings; optimize tax revenue generation to support development; generate skilled employment and develop local capacity for the mineral industry; create demand for local goods and services; contribute to infrastructure development; produce raw materials for local usage; contribute to the transformation of mining, especially rural, communities; serve as a catalyst for wider investment in the economy; and collaborate in the harmonization of mineral policy in ECOWAS and, indeed, in Africa” (Government of Ghana 2014, p. 15-16). Furtherly, the government identifies that to be able to achieve these objectives, the only means possible is through the formulated policy that will manage the regulation as well as ensure the total development of the mining sector.

The policy document is divided into 11 sections that tackle various aspects that will promote the functionality of the extractive industry. Most importantly, section 9 of the policy document is committed to promoting the activities of small-scale mining. The recognition and the ability to support the activities of small-scale mining was based on the fact that small-scale mining serves as a means of employment, assist in rural livelihood, and encourages the establishment of local private enterprises (Government of Ghana, 2014). However, in order for small-scale miners to function effectively and to operate in a sustainable manner, the government intends to render technical and economic support as well as outline measures to protect the environment during the activities of small-scale mining. In this regard, the policy document outlines the measures the government will implement to promote and regulate the activities of small-scale mining in the country. These include: “the establishment of district offices manned by Minerals Commission personnel to give technical assistance to small-scale miners; geological investigation and demarcation of areas suitable for small-scale mining; provision of finance to small-scale miners to improve their operations; and education, training and provision of logistics to enhance the corporate governance, efficiency, and safety of their operations” (Government of Ghana 2014, p.34).

Furthermore, in order to supplement the progress and prospects in the small-scale mining sector, more actions were taken by the government, which include; “ developing measure to improve access to finance for small-scale miners through the establishment of cooperative savings, equipment lease agreements, concessional lending schemes, and assistance in business skills training; simplification of procedures for the application of license for small-scale mining operations; designation and preservation of viable areas for small-scale mining activities by the Minister in consultation with the Minerals Commission; management of land-use conflicts in the small-scale mining sector; encourage the use of appropriate affordable and safe technology in small-scale mining practices; encourage larger mining companies to support small-scale miners with mutual interest as the main goal; and to disseminate information to raise awareness of health, safety and environmental risk in order to mitigate the negative impacts of small-scale mining in the country” (Government of Ghana 2014, p.35-36).

This policy document encourages small-scale miners to mine in permitted zones. The document also encourages that the activities of small-scale mining should not be equated to illegal small-scale mining. In this regard, the government has pledged to protect all its mineral resources and also to work effectively with stakeholders involved in the mining sector.

3.4.6 National Environmental Policy (NEP)

The development of plans to monitor the environment dates as far back as the 1980s (Environmental Protection Council, 1991). As a result of the environmental impacts of the Structural Adjustment Programme (SAP) and the Economic Recovery Programme (ERP), the government developed the first Environmental Action Plan (EAP) of 1991 to tackle issues related to the environment (Environmental Protection Council, 1991). However, due to the ceaseless utilization of the natural resources by people in order to meet their sincere socio-economic ambitions, little attention has been drawn to managing and protecting the diminishing natural resources and the environment at large. The consequences of these actions have led to irreversible reparations causing water and air pollution, deforestation, soil erosion, land degradation, and biodiversity loss (Environmental Protection Council, 1991). There was, therefore, the need for government to develop a policy that will ensure that the environment and the resources that are found within the country are protected, conserved and used in a sustainable manner.

In this regard, chapter three of the EAP describes the national environmental policy of the country. The main aim of this policy is to ensure that the quality of life that is of a standard is appreciated by the present citizens of the nation as well as the future generation to come (Environmental Protection Council, 1991). Therefore, the specific objectives in order to achieve this aim include:

- ❖ “Maintain the ecosystems and ecological processes essential for the functioning of the biosphere;
- ❖ Ensure sound management of natural resources and the environment;
- ❖ Adequately protect humans, animals and plants, their biological communities and habitats against harmful impacts and destructive practices, and preserve biological diversity;
- ❖ Guide development in accordance with quality requirements to prevent, reduce, and as far as possible, eliminate pollution and nuisances;
- ❖ Integrate environmental considerations in sectoral structural and socio-economic planning at the national, regional, district and grass-root levels;
- ❖ Seek common solutions to environmental problems in West Africa, Africa and the world at large” (Environmental Protection Council 1991, p.12).

Furtherly, for effective implementation of the NEP various principles were applied. Some of these principles are in accordance with the environmental policy principles outlined by Sand, 2003. The principles are “optimum sustainable yield in the use of resources and ecosystems; use of most cost-effective means to achieve environmental objectives; use of incentives in addition to regulatory measures; delegation of decision-making and action to the most appropriate level of government; polluter pays for the cost of preventing and eliminating pollution and nuisances caused by him; public participation in environmental decision-making; and international co-operation” (Environmental Protection Council 1991, p.12-13).

The NEP is further influenced by the preventive principle. The preventive principle entails instituting the appropriate action before major damage occurs. This requires that action should be taken at an initial phase before the damage escalates. This principle, therefore, asserts that “a state may be under obligation to prevent damage to the environment within its own jurisdiction, including by means of appropriate regulatory, administrative and other measures” (Sands, 2003, p.246). Therefore, the government of Ghana has stated that it will “commit itself to the environmentally sound use of both renewable and non-renewable resources in the process of

national development; develop procedures for the proper utilization of land resources to avoid or minimize conflicts; institute and implement an environmental quality control programme by requiring prior environmental impact assessments of all new investments that would be deemed to affect the quality of the environment; develop appropriate measures to control pollution and the importation and use of potentially toxic chemicals; to develop a professional cadre to supervise, coordinate, implement and enforce procedures and legislation which are vital for protecting the environment; dedicated to providing the appropriate agencies with the relevant information needed for environmental protection and for the enforcement of relevant environmental regulations and legislation; and establishing an adequate legislative and institutional framework for monitoring, coordinating and enforcing environmental matters” (Environmental Protection Council 1991, p. 13).

3.4.7 National Water Policy

The water resources available in Ghana can be categorized into two, thus surface and groundwater (Government of Ghana, 2007). The surface water resources consist of three river systems which includes “ Coastal, Volta, and South Western river systems while the groundwater resources also consist of three geological formations namely the Mesozoic and Cenozoic sedimentary rocks; the consolidated sedimentary; and the basement complex comprising crystalline igneous and metamorphic rocks” (Government of Ghana 2007, p.2-4). The water resources available are used for consumptive and non-consumptive purposes such as water supply, inland fishing, irrigation, water transport, livestock watering, and hydropower generation (Government of Ghana 2007, p.5). To promote the effective utilization of water resources, the national water policy was developed.

This policy was implemented in order to regulate the use of water in the country. This is as a result of increased degradation in the quality of water resources in the country of which the activities of mining are not an exception. Section 2.2.4 of the policy focuses on the use of water for non-consumptive and other uses. It is in this section that the use of water in the mining sector is explained. In this regard, the challenges responsible for the creating of this policy include “ensuring availability of water in suitable quantities for energy production and other non-consumptive uses; ensuring effective water demand management, improved efficiency of use, effective conservation measures, realistic pricing and prevention of pollution of water resources

and the environment; and balancing the competing and conflicting demands of water between mining firms and adjacent communities” (Government of Ghana 2007, p. 18).

In relation to these challenges, the policy developed objectives in order to ensure the efficient use of water and also serve as the starting point of finding solutions to the challenges. These include “ensuring the availability of water for hydropower generation, various industrial and commercial uses, mining operations, water transport, and recreational purposes; and to ensure adequate protection of water sources in mining and other industrial areas” (Ibid). Therefore, the government outlined various measures it will take in order to achieve the set objectives. These objectives are in accordance with the sustainability principle. This principle explains that in the quest of humans to make a better place for themselves through the use of natural resources, it must be noted that the current use of these resources should not affect the ones that will be used by the next generation to come. This principle promotes the efficient and wise use of natural resources to avoid depletion. Even though there is no single definition of sustainability, various people and groups of people have tried to explain what sustainability entails. According to the WCED (1987), sustainability is defined in the context of sustainable development as “development which meets the needs of the present without compromising the ability of future generations to achieve their needs and aspirations” (p, 43). Furthermore, International Council for Local Environmental Initiatives (ICLEI) cited by Eccleston & March (2011) explained that sustainability is a “development that delivers basic environmental, social and economic services to all without threatening the viability of the natural, built and social systems upon which these services depend” (p,58). On a broad perspective, the sustainability principle emphasized that individuals must make a conscious effort to use resources that are renewable wisely, in order not to go beyond the capabilities of the environment to restore these resources. In order to achieve sustainability which is a long-term goal, sustainable development serves as the process through which this goal can be achieved (Eccleston & March, 2011). For this reason, the Governments outlined measures for the sustainable use of its water resources including “to facilitate availability of water resources for industrial uses through sustainable water resources management; require industries, including mining operations, to develop and implement environmental management systems which take into account the impact of industries on the country’s water resources; encourage development of codes of practice for efficient water use and cleaner production technologies in industrial activities; and formulate

hydropower development plans to meet current and future demands in conjunction with other uses, through sustainable water resources management” (Government of Ghana 2007, p.19).

Aside from these actions, the environmental policy principles that are associated with this policy are the precautionary and the polluter pays principles. The precautionary principle is one of the core standards of sustainable development. Before the official recognition of this principle in the middle of 1980s (Sands, 2003), governments were not concerned about the protection of the environment until major damage had occurred (Beder, 2013). However, the rate at which various environmental disasters occurred were alarming. The main agenda of this principle is to ensure that when there is no scientific conviction in a situation related to the environment, the precautionary principle will serve as a channel through which international environmental laws will be developed and applied (Ibid). On the other hand, even though precautions must be taken to protect the environment, the inability of people to exercise caution may result in payment to repair the damages caused. Therefore, the polluter pays principle requires that “the cost of environmental impairment, damage and clean up should not be left unpaid or external to production and thereby picked up by society at large, or by general taxation”(Eccleston & March 2011, p 38). This means that the party responsible for causing any damage to the environment is obligated to pay for the cost to administer preventive measures. These principles stated in this policy “seeks to minimize activities that have the potential to negatively affect the integrity of all water resources; to serve as a disincentive to uncontrolled discharge of pollutants into the environment; and recognizing water as a finite and vulnerable resource, given its multiple uses” (Government of Ghana 2007, p.18).

Aside from the environmental and water policies, land is the most important components of the mining industry. Without land, mining will be impossible. Therefore, the next section will focus on discussing the policy responsible for land-related issues.

3.4.8 National Land Policy (NLP)

Before the existence of the National Land Policy (NLP), the lands in Ghana were managed through the court system through the application of several customary practices and the use of lawful instruments. In this regard, various statutes such as the “Public Lands Ordinance, 1876 (Cap 134); the Land Appropriation Ordinance of 1901; the Land and Native Rights Ordinance, 1927 (Cap 143); the Kumasi Lands Ordinance, 1943 (Cap 145); the Akim Abuakwa (Stool Revenue) Act (No. 28), 1958; and the Stool Lands Act, 1960 (Act 27)” (Government of Ghana 1999, p.i) were enacted

to deals with concerns related to land. The NLP was implemented on the 21st of January 1999 after an initial attempt in 1973 (Government of Ghana 1999, p.i-ii). This policy is responsible for managing Ghana's total landmass of 238,539 square kilometers (Government of Ghana 1999, p.1).

The aim of this policy is to handle concerns related to the management of land in the country such as "indiscipline in the land market ranging from land encroachments; multiple land sales; use of unapproved development schemes; and a weak land administration system and conflicting land uses, such as, the activities of mining companies, which leave large tracts of land denuded as against farming, which is the mainstay of the rural economy" (Government of Ghana 1999, p.ii). The implementation of this policy is as a result of the country's dependence on the natural resources found within the land which serves as the medium for survival, the basis of sustainable source of income, the promoter of socio-economic development and wealth acquisition, and the drawing of strength both physical and politically (Government of Ghana, 1999). According to the policy, the country recognizes that majority of the activities of the populace, thus, cultural, economic and social are intently associated with the use of a natural resource of which land is not an exception. Some of the activities that involve the use of land include manufacturing industries, forestry, human settlements, agriculture, transportation networks, and mining (Ibid). Based on these activities, there is an urgent need to ensure that land is used wisely to promote human subsistence; conserved and preserved for future generational use.

Fundamentally, public or state and private lands are the two types of land ownership in the country. It must be noted that the vested land available without any owner is evenly distributed among the state and the traditional landowners. According to the policy document, "Public or State lands are defined as lands compulsorily acquired by the government through the invocation of the appropriate legislation, vested in the president and held in trust by the State for the entire people of Ghana" (Government of Ghana 1999, p.2). Alternatively, "private lands in most parts of the country are in communal ownership, held in trust for the community or group by a stool or skin as a symbol of traditional authority, or by a family" (Ibid). Administratively, these public and private lands are managed by customary practices and enacted legislation.

In light of the current customary practices, various formal land sector agencies were formulated as part of the Ministry of Land and Forestry to promote the land management system in the country. The functions of these agencies include "administration of public lands; administration of vested

lands; administration of stool lands; settlement of stool land boundary disputes; collection and disbursement of stool land revenue; undertaking of national land surveys and mapping, licensing of land surveyors and verification of survey plans; registration of titles and protection of interests in land throughout Ghana; and the formulation of land development standards, co-ordination of land development activities and approval of settlement development plans” (Government of Ghana 1999, p.2-3).

Nonetheless, various challenges arose even though the land sectors agencies performed their administrative functions. Some of the challenges include “indiscipline in the land market characterized by land encroachments, multiple sales of residential parcels, unapproved development schemes, and haphazard development which has led to environmental problems, disputes, conflicts, and endless litigation; compulsory acquisition by government of large tracts of lands, which have not been utilized and for which payment of compensation has been delayed has in one way or the other left landowners almost landless, denied their source of livelihood and have become tenants on their own lands, giving rise to poverty and disputes between the state and the stools as well as within the private land sector; inadequate security of land tenure due to conflicts of interests between and within land-owning groups and the state; difficult accessibility to land for agricultural, industrial, commercial and residential development purposes due to conflicting claims to ownership and varied outmoded land disposal procedures; weak land administration system characterized by lack of comprehensive land policy framework, reliance on inadequate and outdated legislation; and lack of consultation, coordination and cooperation among land development agencies” (Government of Ghana 1999, p.3-4).

In this regard, the policy provides the framework for addressing the challenges identified above by deriving guiding principles for the country’s land policy in order to promote equitability in the allocation of lands as well as promote stability and sustainability in the socio-economic developments of the country. These principles incorporate the public participation principle and the polluter pays principle of which the polluter pays principle has been discussed in the previous sub-section. The public participation principle encourages the involvement of the citizenry in taking part in decision making and policy implementation of issues that are major concerns to the society, especially environmental related issues of which land is not an exception. Essentially,

public participation refers to the right to information and the ability to fully participate in the decision-making process by individuals affected by a problem in society (Beder, 2013).

According to the Aarhus Convention (1998), aside from the recognition that citizens have the right to information and access to justice on issues that concern the environment, citizens also have the right to be involved in decision makings through participation. This reveals the fact that participation in environmental decision making is highly recommended. One importance of public participation is that it is a system of governance that promotes fairness. This creates a way for the ones affected by a decision in society to have an influence on the decision (Beder, 2013). For these reasons, the policy outlines the principles in the table below to ensure that land is used and governed effectively.

- “the principle of land as a common national or communal property resource held in trust for the people and which must be used in the long-term interest of the people of Ghana;
- the principle of optimum usage for all types of land uses, including human settlements, industry and commerce, agriculture, forestry and mining, the protection of water bodies and the environment in the long-term national interest;
- the principle of government facilitating equitable and reasonable access to land within the context of national land-use planning;
- the principle of fair access to land and security of tenure;
- the principle that whoever takes land for mining and timber operations should restore the same to the state it was before the operation. In effect, the principle that the "Polluter Pays" applies to land, water resources, and the environment;
- the principle of private sector as an engine of growth and development subject to national land use guidelines;
- the principle of private sector as an engine of growth and development subject to national land use guidelines;
- land development fees and taxes should reflect the prevailing economic market values;
- the principle of community participation in land management and land development at all levels, which is vital for sustainable urban and rural land development”.

Source: (Government of Ghana 1999, p.5-6).

Table 1: Guiding principles for effective land use

In order to achieve the principles listed above, various objectives were formulated to ensure effective policy implementation. These include “ensuring that every socio-economic activity is consistent with sound land use through sustainable land use planning in the long-term national interest; facilitating equitable access to and security of tenure of land; protect the rights of landowners and their descendants from becoming landless or tenants on their own lands; instill order and discipline into the land market to curb the incidence of land encroachment, unapproved development schemes, and multiple or illegal land sales; minimize and eliminate, where possible, the sources of protracted land boundary disputes, conflicts and litigations; create and maintain effective institutional capacity and capability at the national, regional, district, and community levels to ensure productive land service delivery; promote community participation and public awareness at all levels in sustainable land management and development practices; and ensure continuous education of the general public on land matters” (Government of Ghana 1999, p.6-7).

Primarily, the policy document is divided into 5 sections. Section 4 systematically outlines the policy guidelines of which procedures related to mining are indicated clearly. In this regard, section 4.4 encourages the sustainable use of land. According to section 4.4(d and f), it prohibits activities such as mining and other extractive industries from operating in a permanent forest and wildlife reserves as well as coastal and inland wetlands. Furtherly, section 4.4(h) states that “land use involving mining, other extractive industries, mechanized agriculture, cattle ranching, dairy farming, and manufacturing industry will have to conform to prescribed environmental conservation principles and guidelines” (Government of Ghana 1999, p.12). This guideline is to ensure that individuals engaged in activities that involve the use of land should do all it takes to prevent the wastefulness of this natural resource.

Progressively, section 4.5 of the policy guideline is dedicated to enhancing land capabilities and land conservation. In this regard, section 4.5(a and b) states that “to ensure the conservation of environmental quality, no land with a primary forest cover will be cleared for the purpose of establishing a forest or tree crop plantation or mining activity” and “no planted tree plantation shall be cleared for the purpose of establishing a mining activity” (Government of Ghana 1999, p.13).

This policy recommends that for an effective and full functionality, various stakeholders such as the governmental agencies, traditional authorities, opinion leaders and the local community at large must be involved in the decision-making processes.

In the nutshell, the policies discussed above are interrelated to each other in relation to the mining industry. A setback in any of these policies can lead to the dysfunction of the others. These policies are formulated in accordance with the environmental policy principles of which some of them have been discussed. However, the mere proclamations of these principles do not reflect in the activities of those involved in small-scale mining especially the illegal miners.

3.5 Major Actors in the Small-Scale Mining Sector

In order to ensure that the activities of small-scale miners are monitored, the legal frameworks discussed above are made effective through the collaboration with actors in the mining sector. The major actors in the small-scale gold mining sector include Environmental Protection Agency (EPA), Minerals Commission (MC), Precious Minerals Marketing Company (PMMC), Water Resource Commission, traditional authorities, and large-scale mining companies (Minerals Commission, 2015, p.23-24). Their respective roles and responsibilities in small-scale mining will be discussed below.

The first actor is the EPA. The major role of the EPA is the assessment of the well-being of the environment by checking the effects of the activities of humans on the environment. Therefore, the EPA are responsible for the enforcement of laws on the protection of the environment, speediness in the processing of environmental permits for mining, proper education of small-scale miners on environmental issues and monitoring the activities of small-scale miners and ensures the protection of the environment (Hens & Boon, 1999; Mensah et al., 2015). Furthermore, before a project can be implemented the officially required process to assess the positive or negative impact of that particular project on the environment is conducted through the Environmental Impact Assessment (EIA) (Minerals Commission, 2015).

Furthermore, the second actor is the Minerals Commission. Aside from the developing of policies and regulatory framework in relation to mining, the Minerals Commission has various roles and responsibilities as well, such as, making the acquisition of small-scale mining license affordable, organizing periodic workshops for stakeholders in the mining sector to discuss the way forward for the small-scale mining industries and also to see to it that the processing of licenses are done on time (Government of Ghana, 1993). Furthermore, the Minerals Commission has the responsibility of making sure minerals mined and sold on the market are obtained in humane

conditions (Ibid). Thus, they encourage good mining practices and discourage bad ones. This way the miners are kept in check to use good mining practices.

In addition, the extraction of minerals by small-scale miners requires the sale of it in order to gain some income for their toil. In this regard, the third actor which is the Precious Minerals Marketing Company (PMMC) was established to assist small-scale miners to sell their products (Minerals Commission, 2015). The PMMC has been in existence since 1963 and was formerly known as the Diamond Marketing Corporation (Hilson, 2001). However, it became a state corporation when it was merged by Legislative Instrument (LI) no. 401 of 1965 (Ibid). The PMMC was officially established in 1989 through the Precious Mineral Marketing Corporation Law (PNDCL 219) (Ayamba et al., 2017). The main objective of this corporation is to promote the foreign exchange earnings of the sector through the purchasing of gold from small-scale miners and sold for profitability. Furthermore, there are other roles that the PMMC is responsible for, thus, encouraging the expansion of the precious minerals industries in Ghana; valuing, grading and preparing of profitable mineral deposits; and assigning roles to registered negotiators for the buying of precious minerals from small-scale miners (Minerals Commission, 2015).

Apart from the EPA, MC, and PMMC, the Water Resource Commission is also one of the major actors in the small-scale mining sector for which it is responsible for the protection of water bodies from the negative impacts of the activities of small-scale miners and also responsible for regulating and managing the use of water resources (Government of Ghana, 1996). Aside from educating the miners on good mining practices so as not to pollute water bodies near the mining areas, they also educate the end-users of these water bodies about the risks and consequences of consuming water that is polluted (Minerals Commission, 2015).

Finally, the large mining companies in Ghana as actors play the role of releasing certain portions of their lands for minor mining activities by small-scale miners, they promote good mining relationships between small-scale mining groups and also assists small-scale miners monetarily, by giving them low-interest-rate loans as a startup for their mining businesses (Minerals Commission, 2015).

4 RESEARCH DATA AND METHODOLOGY

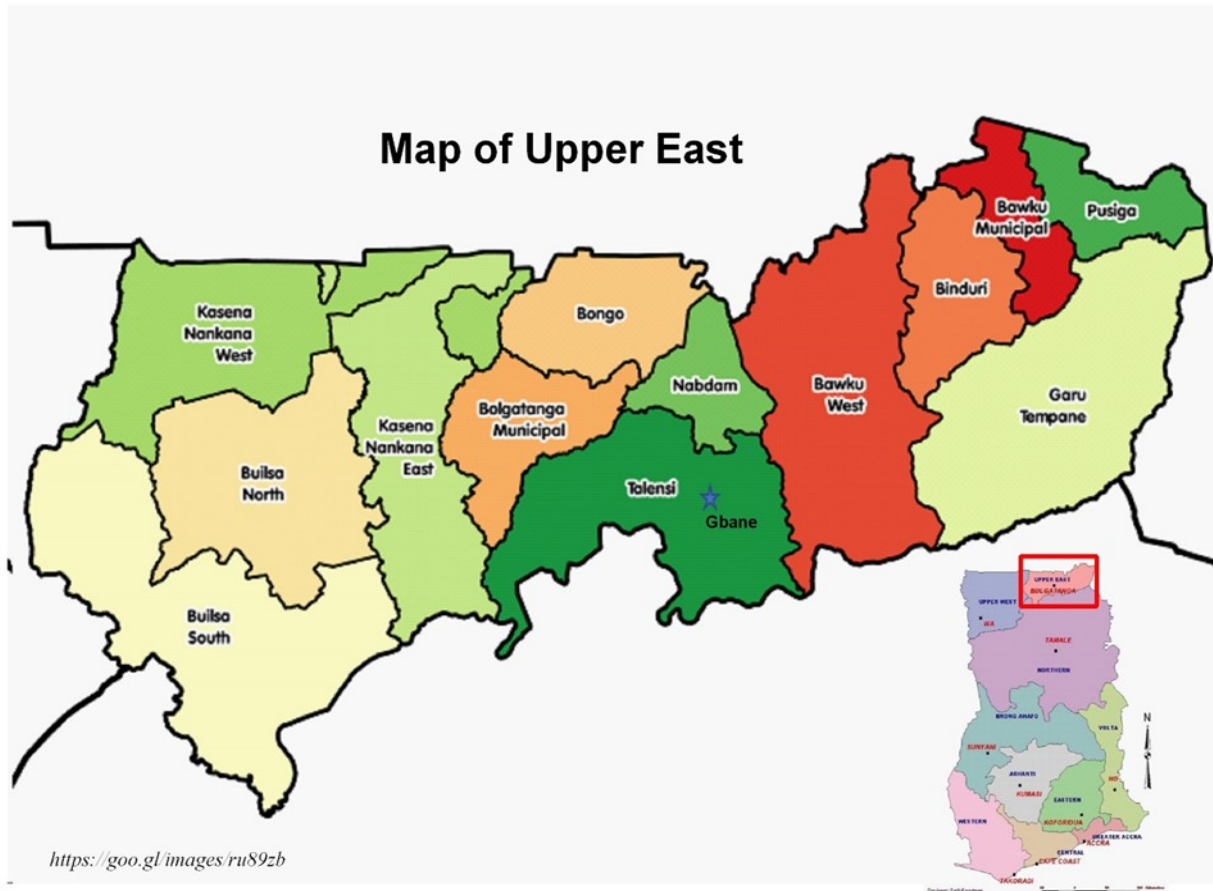
4.1 Description of the Study Area

4.1.1 Location

Gbane is the community chosen for this study. Gbane is a small community located in the Talensi District in the Upper East Region of Ghana. This district is one of the recently created districts following the carving out of the Nabdam district from the then Talensi-Nabdam District Assembly in 2012 by the Legislative Instrument (L.I.2110) (Ghana Statistical Service, 2014). The district has its administrative and political seat situated in Tongo which is also the district's capital. The district is surrounded by other districts from the north, south, east and west. These districts include the Bolgatanga Municipality; West and East Mamprusi Districts; Kassena Nankana Districts; and the Bawku West and Nabdam Districts. The latitudinal and longitudinal bearings of the district are 10° 15' and 10° 60', and 0° 31' and 1° 0.5' respectively (Ghana Statistical Service, 2014). The district has a total land area of about 838.4km² indicating that the district is large and will require many socio-economic infrastructures in terms of the geographical spread of the district. The vision of the district is to ensure that all resources are harnessed and sustainably managed in collaboration with all partners to ensure food security, gainful employment, equitable access to health and education, peace and security for a high standard of living for its people. Some of the communities in the district include; Dakota, Tula, Gbane, Sekoti, and Tongo.

Among the communities stated above, Gbane has become the most patronized community since the discovery of gold in the Talensi District in the early 90s (Cobbina et al., 2013). As a result of this, the negative impacts on the activities of mining compared to the positive impact is unimaginable in the small-scale gold mining industry. The industry has reached an extent where the activities of small-scale gold mining have become common leading to the majority of inhabitants being involved in the illegal aspect and not paying special attention to the policies, laws, rules, and regulation put in place. It is for this reason that this community has been chosen for this research to understand and to find out why this is happening and why the policies for mining especially the small-scale gold mining sector are not functioning, as they should.

Below is a map showing the Gbane in the Upper East region.



Source: adapted from
 [https://en.wikipedia.org/wiki/Talensi_(district)#/media/File:Districts_of_the_Upper_East_Region_(2012).svg]

FIGURE 6: A map of Upper East Region of Ghana showing the research area, Gbane (star).

4.1.2 Physical Features of the District

The main vegetation of the district is made up of grasses and trees which constitutes the savannah woodland. The trees have various characteristics such as their scattered nature, they are resistant to drought and they are short in nature. The climate is tropical, and it is characterized by two seasons. The rainy season is the first one and it begins in May and ends in October. The yearly rainfall is from 88mm to 110mm (Ghana Statistical Service, 2014). The rainfall pattern is unpredictable, and it changes from time to time. The second one is the dry season which also begins from the middle of October and ends in April. The dry season has various attributes which include cold, dusty and dry winds which are also referred to as harmattan winds. During this

season, temperatures range from as low as 12°C at night in December and more than 40°C during the daytime in March and April (Ghana Statistical Service, 2014). Human interference through bush burning during the long dry season and permanent cultivation is important, leading to semi-arid circumstances.

The topology of the district at the Tongo zones include slopes, low land, and scattered rocks. Generally, the soil has low fertility since it is developed from granite rocks which are low in organic matter and coarse in nature making it difficult to support plant growth. One of the main problems in the district is erosion. Aside erosion, flooding and waterlogging cannot be excluded due to the nature of the soil which ranges from sandy to clay. These types of soils are very difficult to till even though they possess rich natural productiveness. The White Volta is the main river in the district, and it has several branches.

In 2010, the population and housing census conducted estimated that 81,194 represents the total population of the Talensi District with a percentage of 7.8 as the overall population of the region (Ghana Statistical Service, 2014). There are more males than females in the district with a representation of 50.3 percent to 49.7 percent. However, 84.1 percent of the population is rural while 15.9 percent constitute the urban population in the district (Ghana Statistical Service, 2014).

The main economic activities in the region are hunting, forestry, and agriculture (Ghana Statistical Service, 2014). Majority of the population are engaged in agriculture with their main product as maize, millet, beans, sorghum, guinea-corn, groundnut, tomatoes, and onions. Even though agriculture is one of the main economic activity, it is seasonal and low paying. Furthermore, crafts in cottage industries are also of low skill and therefore attracts low returns. These in addition to the increase in population and limited lands for farming are creating tension in some parts of the district. Other economic activities include livestock and poultry production; quarrying; and small-scale gold mining. Also, the trees that produce fruit for profitability are the shea nut, baobab, acacia, and dawadawa respectively (Ibid).

4.2 Instruments and Methods of Data Collection

4.2.1 Research Strategy

The research strategy revolves around two main strategies – qualitative and quantitative strategies (Alan Bryman, 2012). There is, however, a third strategy, which involves using both the qualitative

and the quantitative strategies, referred to as the mixed-method strategy (Johnson et al., 2007), which has been used significantly by a number of researchers. According to (Alan Bryman, 2012), there are distinctions between quantitative and qualitative strategies. The quantitative strategy uses the deductive approach in the form of testing theory and employs measurement while the qualitative strategy uses the inductive approach in the form of theory generation and employs the use of words. Furthermore, Denzin & Lincoln (2011, p.8) explained that “qualitative strategy stresses the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry while [the] quantitative strategy emphasizes the measurement and analysis of causal relationships between variables, not processes”. In a nutshell, Bryman, (2012) emphasizes that the differences between qualitative and quantitative strategies are based on epistemological issues, ontological concerns and the role of theory.

This thesis will rely mainly on qualitative strategy. I decided to use this strategy because to understand why there are policies to regulate the issue of mining, yet the issue of illegal small-scale mining exists, one must first identify who these policies are meant for. The policies are meant for people living in a particular setting and therefore information obtained must be analyzed through language and the kind of behavior found within this setting. Furthermore, their feeling and motivations for getting involved in the activity of small-scale gold mining are clearly underlined rather. Moreover, when there is a single problem, there is more than one problem associated with it, hence, the use of the qualitative strategy. In this regard, Crotty (1998) was of the view that in order to deduce meaning and to understand a situation involving people, one must be able to enter into their world, mingle with them, establish a social setting and allow them to come out with their stories without restrictions in order to gather personal information from them.

4.2.2 Research Design: Case Study

The research strategies together with the research design produce the result that the researcher is looking for. Therefore, standards that are used when assessing social research is very important. According to Denzin & Lincoln (1998), “a research design describes a flexible set of guidelines that connects theoretical paradigms to strategies of inquiry and methods for collecting empirical materials” (p.28). Similarly, Bryman (2012, p.46) explains in simple terms that “a research design provides a framework for the collection and analysis of data”. He, therefore, identified five

prominent research designs namely; “experimental design, cross-sectional, comparative design, case study, and longitudinal design” (Ibid).

Having identified the most prominent research designs above, this thesis will rely on the case study design. Creswell et al. (2007, p.245) explained that a “case study is a qualitative approach in a research in which the investigator explores a bound system (a case) or multiple bound systems (cases) over time through a detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual materials and documents, and reports) and report a case description and case-based themes”. In addition, Yin (1989, p.23) recognizes that “a case study is an empirical inquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. In simple terms, Bryman (2012) is also of the view that a thorough and in-depth analysis of a single case is what constitutes a case study. The single case could be a single community, family, school, an organization, a person or a single event (Ibid). In this case, my focus was on a single community, which allowed me to do an in-depth investigation of the issue at hand. Moreover, I could not have assessed the whole country since it would have been time-consuming and extremely expensive.

4.2.3 Documents and Interviews

In this thesis, data used comprised of official documents, interviews, and observation. The official documents include policy documents and existing regulations that legalize the activities of small-scale gold mining. The purpose of these documents was to provide a detailed understanding of the topic of study. They were used partly to describe the legalization of small-scale mining in Ghana. In addition, the documents served partially as a material guide for the formulation of the questions for the interviews.

In order to acquire more information on the issues related to small-scale mining, I conducted twenty-four interviews. Four experts, ten small-scale miners, and ten non-small-scale miners’ interviews. Bogner et al., (2009) are of the view that an expert interview refers to the discovering of information from a person who has vast potential knowledge in a field understudy that is not accessible to others. I decided to conduct expert interviews to obtain a better understanding of the increased activities of illegal small-scale gold mining in the study area.

Before the expert interviews began, the targeted institutions for this study were contacted through emails to seek their permission to participate in the interview. However, not all of them responded to the emails that were sent to them. Invitation letters were sent to those who did not respond to the emails to get their approval to be able to conduct the interview, but no responses were obtained from them either. Despite these hindrances, four out of the seven experts who were contacted accepted to do the interviews. The method used for selecting the experts was purposive sampling. According to Bryman (2012), purposive sampling is important for unit selections such as organizations, departments, and people. These units were the ones that were relevant to the study. These included representatives of the Environmental Protection Agency (EPA), Northern Development Authority (NDA) formally known as the Savannah Accelerated Development Authority (SADA), Minerals Commission (MC), and a non-governmental organization (NGO) Centre for Alternative Development (CENFAD). These organizations perform various functions which are similar to each other and their common goal is to ensure that humans and the environment coexist. In this regard, the NDA is responsible for ensuring the increase in the economic and social development of the Northern Development Zones, which is made up of the Northern region, Upper East Region, Upper West Region, and parts of the Volta and Brong-Ahafo Regions. CENFAD is also working in areas to promote good governance and awareness of climate change. The EPA is responsible for improving and protecting the environment. MC manages all issues related to mining.

On the other hand, the small-scale and non-small-scale gold miners were randomly selected for the interviews. I chose to employ this procedure because the community consists of two sets of people: those involved in small-scale mining and those who are not involved in small-scale mining. Even though Bryman (2008) identified this procedure to be difficult, expensive and time-consuming, I found it to be the best way possible to administer the interviews.

Progressively, the interviews were conducted using semi-structured interview guides. These interview guides were developed in accordance with the objectives of the study and the literature reviewed in relation to the topic. According to Bryman & Bell (2015), the use of a semi-structured interview is to keep an open mind on an issue in order to deduce concepts and theories from a data before drawing any conclusions. This structure was appropriate for this work because the interview was very flexible which allowed the interviewees to answer the questions at their own

convenience. Furthermore, the interviews also allowed me to get more information on the issue of small-scale mining in the community as well as delve deep as one question led to another even though they were not stated on the interview guide. In addition, I addressed the issue of privacy through seeking the consent of the respondents before the interviews even began. Also, in order to get the information I needed for the study, I employed a translator who could speak and understand their local dialect as well as the English language.

Twenty-four interviews were conducted between January and February. All interviews were done using face-to-face interaction except one, which was done via phone call. One of the expert interviewees was not present when I arrived at his office due to personal reasons beyond his control. Since he is the one with the expertise on issues regarding small-scale mining and mining in general, he was contacted on the phone and he agreed to do his interview via phone the next day. At the end of each expert interview, I thanked them for their contribution to the study. I asked if I could contact them via email if I needed more clarifications later and I also made them the same offer.

As stated above, observation was employed during the data collection phase. This was used to examine the small-scale mining activities in the community. These include dug out pits, equipment used for the extraction of the minerals, mineral processing, and the overall processes involved in the mineral extraction. Furthermore, I observed each interviewee acutely during their responses. The gestures they made, the tone of their voices, and their attitudes during the interviews were all observed.

The length of the interviews varied between fifteen to ninety minutes. During each interview, notes were taken but since I had to listen at the same time to get the necessary information as exact as it was, with their permission, responses to the questions by the interviewees were recorded with the aid of a portable Sony voice recorder that was borrowed from the department of historical and geographical studies. I also assured the interviewees that their personalities will remain anonymous and their responses which were being recorded will also be confidential. The recordings were transcribed later for analysis and the conclusion of the work. Transcription was done in a text form. The exact words of the interviewees were written in the same way as they were spoken. However, to be able to understand the text properly, a few of the words were edited or deleted since it did not add anything to the research. The transcribed text covered roughly sixty pages.

4.2.4 Data Analysis

The data was analyzed qualitatively based on the outcome of the interviews conducted. In order to complete this thesis, a better understanding of a phenomenon was through the experience of those who have experienced it directly. I also had to recognize that the viewpoints of participants were unique and of value and can be understood within the context of their experiences (Castleberry & Nolen, 2018).

The interview data were analyzed using thematic analysis. Thematic analysis is a data analysis strategy that is mostly used with all qualitative designs (Ibid.). According to Braun & Clarke (2006), thematic analysis is defined as a “method for identifying, analyzing and reporting patterns (themes) within data” (p.79). Furthermore, thematic analysis can be used with other theoretical frameworks since it is not bound to any specific framework. However, it must be noted that not all theoretical frameworks can work hand in hand with thematic analysis. In thematic analysis, two approaches of analyzing data can be identified: inductive or ‘bottom-up’ approach (Frith & Gleeson, 2004) and theoretical or deductive or ‘top-down’ approach (Hayes, 1997). The inductive approach is data-driven and does not rely on the theoretical interest of the researcher’s areas of study. Therefore, Braun & Clarke (2006) are of the view that the inductive approach is a “process of coding the data without trying to fit it into a pre-existing coding frame” (p.83). Alternatively, the theoretical approach relies mainly on the researcher’s area of interest in relation to a particular study with a less explanation of the whole data and a more comprehensive analysis of some parts of the data. In this thesis, I decided to use the theoretical approach because I had already gained knowledge of the study area through the review of literature which are related to the study on already existing literatures.

I began the analysis process by reading the transcribed text of the interviewed data several times in order to acquaint myself with the content. Furthermore, I outlined the ones that caught my attention and served as important information to aid in the analysis by pre-coding them through circling, underlying or highlighting the words or sentences (Boyatzis, 1998). Coding is however described by Charmaz (2006, p.46) as “the pivotal link between data collection and explaining the meaning of the data”. Similarly, Saldaña (2009) explains that “a code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p.3). It must be noted

that coding is influenced by the interest of the researcher, personality, context and nature of the research (Charmaz, 2006). Likewise, coding is fundamentally an explanatory process and not the absolute precision of the outcome.

4.2.5 Reliability and Validity of the Research

In order to ascertain the validity of this research, an understanding of what this research is all about is key. The aim of this research is to understand why illegal small-scale gold mining is still in existence even though there are various policies and laws in the mining sector that is responsible for this in the country. In assessing and establishing the quality of research, reliability and validity are very important criteria to incorporate into this research (Bryman, 2016). Furthermore, Mason (2002, p.38) and Denzin & Lincoln (1998) are of the view that “reliability and validity are different kinds of measures of the quality, rigor and wider potential of research, which are achieved according to certain methodological and disciplinary conventions and principles”. Therefore, validity refers to “observing, identifying or ‘measuring’ what you say you are” (Mason 2002, p.39). However, since I did not conduct quantitative research but rather a qualitative one, I did not measure but attempted to understand the menace of illegal small-scale gold mining using a particular case study within a developing country. In this regard, the integrity of the conclusions that I will make based on this research is my main priority.

4.2.6 Limitations of the Study

Since the government had placed a ban on the activities of small-scale mining nationwide, access to information was very difficult because they were of the notion that the information that they will provide will be used against them. Even though the motive of this study was made known to them, majority of the people were unwilling to take part in the interview because they explained that a lot of people had come to the community to do various forms of an interview and nothing ever came out of it. Therefore, they were no longer interested in taking part in any interviews.

5 RESULTS AND DISCUSSIONS

This chapter deals with the analysis and discussion of results obtained from the data gathered during the interviews for the study. Since this thesis is a qualitative study, the analysis and discussion were done in accordance with the research objectives and analyzed thematically. As stated previously, the objectives of this study were: 1. to investigate the challenges opposing the implementation of policies and laws on small-scale mining in Gbane, and 2. to examine the factors that influence people's participation in illegal small-scale mining activities in Gbane.

5.1 Respondents' Characteristics

A total of 24 people was selected to participate in the interviews for the study. From this total, 19 were males and 5 were females. In relation to the age distribution of interviewees except for the 4 expert interviewees whose ages were not requested, three age categories were obtained 6 were between the ages of 21-30 years, 11 between the ages of 31-40 years and 3 were between the ages of 41-50 years respectively.

The years of operation of the interviewees especially those involved in small-scale mining activities were very relevant to the study. This helped in identifying those who operated with or without a license and for how long they operated. Their years of operation were 1 year and below, 2 years, 4 years, and 7 years and the number of people who have been in operation during these years were 2, 1, 5, and 2 respectively.

5.3 Challenges Opposing the Implementation of Policies and Laws on Small-Scale Mining.

The second research question for this thesis is to investigate the challenges confronting the implementation of policies and laws on small-scale mining. As discussed in chapter two, policy implementation relies on a series of activities in order to make it effective. As postulated by Nweke (2006) and Grindle (2017), policy implementation process must include specification of goals and objectives, issuing and enforcing directives, allocation of funds formation of commission and committees, recruitment of personnel, discharging of duties and responsibilities, and making of short-term decisions. However, various opposing challenges were identified during the interview phase of this study in relation to the implementation of policies and laws in the small-scale mining sector. These challenges will be discussed in detail in the subsections below.

5.3.1 Conflicts

During the interview, one of the challenges identified was conflict. The activities of small-scale gold mining rely on the use of land which does not exclude the uprising of land-use conflicts. Majority of the interviewees' share the view that land-use conflicts have been on the rise since the discovery of gold in the community. The existence of land-use conflicts is as a result of land grabbing and concession ownership. Land grabbing revolves around land acquisitions with little or no consultation and compensation to the previous owner as well as less promotion of sustainability of the environment (Cotula, 2009). Therefore, there are several cases that have resulted in land grabbing which does not include democratic decisions and transparency (Jennings, 1999). Conflicts resulting from concession ownership was as a result of people encroaching on other people's land without prior communication with the owner.

It was also revealed that there is tension in the community as a result of these land-use conflicts. Those who are constantly involved in these conflicts are the chief, the assemblyman, registered small-scale miners, non-registered small-scale miners and the Chinese company that was spotted in the community.

Some of the interviewees further expressed strong views that the lands that were reserved for agricultural purposes such as maize and yam farming were forcefully taken from them for mining activities and the only means they felt was appropriate in reclaiming their lands was to engage in conflict with the party or parties involved. Others also explained that there is a high level of discrimination among community members in terms of acquisition of land for any activity. Those who were not on the favoritism list of the chief received little or no attention which created conflict among community members. Progressively, there was also conflict between members in the mining community and members of another community who wanted to benefit from the activities of mining even though they were not permitted to operate in the community. To ensure that the members in the mining community benefitted from their own lands, the assemblyman became the representative that fought for the interest of the community members.

Emphatically, the increase in land-use conflicts requires the need for conflict resolution in order to promote peace. Therefore, the nature of the conflict determined the level at which the conflict would be resolved. The data collected revealed that conflict resolution was preferred in two levels – local and regional levels. Some of the interviewees expressed that their preferred choice

was to settle conflicts at the local level, thus solving the issue among themselves or transferring the issue to the chief of the community to be the main judge of the case. Others also explained that their preference was for conflict to be resolved at the regional level of which government officials such as the MC and the EPA are involved. They claimed that the involvement of these government officials serves as a deterrent to others from engaging in similar situations. At the regional level, the mode of resolving these conflicts was either to invite those involved to the regional offices or for the officials to visit the community to resolve these conflicts.

To buttress this, conflict resolution is in accordance with the national land policy which indicates that “conflicts with respect to land use will have to be resolved at local, district, the regional or national levels before any economic land-use activity commences” (Government of Ghana 1999, p.13).

5.3.2 Foreign Intrusion

Small-scale mining is an activity set aside for only Ghanaians which is greatly affirmed in the Mineral and Mining Act of 2006. However, during the interview, it was observed that there were Chinese nationals present in the community. They had fully furnished structures and heavy mining equipment that was seen being used for operations. An interviewee explained that the presence of these Chinese nationals was to provide mining support services to small-scale miners in the community.

Some of the experts confirmed and explained further that the presence of this Chinese company is to offer small-scale miners with technical assistance on how to do processing, mining, and extraction as well as assist with the use of their sophisticated equipment. Currently, they are assisting 3 small-scale miners in the community. However, it was revealed that the materials and the machines at the base of this Chinese company were not merely to support small-scale miners in the community but to engage in the activity themselves. Hence, they are practicing small-scale mining of which, by law, is an offense.

The activities of these Chinese illegal miners have led to the distraction of the only school in the community. The school had major cracks in the buildings which were life-threatening and could collapse at any time resulting in the relocation of the school. These major cracks were as a result of the use of explosives. According to the law, the use of explosives requires the possession of a written permission from the governmental agencies responsible for the activities of mining and

this permitted document is only allocated to a licensed small-scale miner who should be a Ghanaian citizen. The presence of the Chinese is to provide technical assistance to small-scale miners and not to practice it themselves. Therefore, the use of these explosives by the Chinese goes contrary to the law and makes it illegal on their part to possess explosive for activities of small-scale mining in the community.

Their presence has also led to conflicts since most of the lands have forcefully been taken from some of the community members by the chief and has been given to them. They have also employed some of the community members to work for them of which other members of the community are displeased by it because they see them as foreigners encroaching on their lands and benefiting on the one thing that supports their livelihood in the community.

Additionally, an expert expressed that the presence of the Chinese miners in the small-scale mining sector is as a result of the nature of the laws which are not streamlined to be able to assist the institutions and the system that operates within the sector. As a result of this, various people do not comply with the law and are left unpunished.

5.3.3 Lack of Staff Strength and Budgetary Constraints

During the interview, it was revealed that the organizations responsible for the implementation of small-scale mining laws in the community have insufficient staff strength and the needed economic support to implement the laws. The allocation of resources for the functionality of the governmental institutions responsible for the mining sector appears to be insufficient. The delay in the payment of salaries of these workers has led to some of them quitting their jobs. Some of the experts explained that others have left their job because of the nature of the work. The nature of their work involves monitoring the activities of small-scale miners in the community by checking on a regular basis to ensure that those operating have the license and those without a license are forced to stop their operations. With delays in the payment of salaries, they are not able to function effectively since the execution of their work is not being paid.

Additionally, the prevention of illegal operations in the small-scale mining sector has resulted in the lives of officials being threatened. Other experts expressed that some of the officials have been chased out of the community whiles discharging their duties to prevent non registered small-scale miner from operating. This has led to a reduction in the number of personnel in monitoring the activities of small-scale mining leading to an increase in the activities of illegal small-scale mining.

Furthermore, Budgetary constraints are as a result of the inadequate distribution of financial resources among the institutions responsible for monitoring the activities of small-scale mining in the various regions. Besides the Upper West Region, the Upper East region is the second less populated region in the country with a total number of 1,046,545 people (Ghana Statistical Service, 2012). During the interview one of the experts expressed that the financial resources allocated annually to their organization are not sufficient for effective execution of their duties. He further explained that these budgets that are submitted for annual financial resources are not fully granted. The financial resources are always reduced which prevents them from achieving their intended goals for the year. This, however, makes it very difficult for them to monitor the activities of all the small-scale miners within the region including Gbane. Although they are willing to work, the resources available do not permit them to carry out their duties in an effective manner.

5.3.4 The Penalty System

During the interview, it was revealed that penalties for crimes related to mining are based on laws proposed in the 1970s. Between 1970 and 2019, the number of people engaged in small-scale mining has increased and likewise, penalties for them should not be the same as now.

In agreement with the statement of an interviewee above, one of the experts explained that before the small-scale mining law of 1989 was integrated into the minerals and mining law of 2006, the punishment for offenders of the law in relation to small-scale mining was to pay one thousand penalty units or imprisoned between one to three years or charged with both. In the amended mineral and mining law of 2006, the penalty for those who go contrary to the regulations and laws of mining are punished by paying a fine of three thousand penalty units or being imprisoned for a maximum of 5 years or both. This indicated that there has been an increase in paying penalties by the offender. The payment of these penalties is in Ghana cedis.

Furthermore, another expert explained that the laws have limitations, especially the mining law. This law is not effective, as it should. People who are caught in the activities of illegal small-scale mining are taken up and prosecuted in the court of law but the fine that is charged for the offense that is committed is not realistic. Paying an amount that is more than what the offenders may get from their illegal activities is virtually impossible. In this regard, offenders are not able to pay the fine and end up in prison.

Even though this has always been the norm to arrest and prosecute offenders, the issue of illegal small-scale mining still exists even more than before. Hence, all the experts are of the view that the penalty system must be reexamined and be more realistic in order to deter others from engaging in such activities. Therefore, there is a need not to just revise the mining law but all other laws in order to ensure an effective and efficient system in the mining sector.

5.3.5 Corruption

In addition to the challenges mentioned above, some of the interviewees were of the opinion that corruption was a major challenge. To begin with, some of the interviewees complained about the failed campaign promises by politicians regarding the provision of electricity to support the activities of small-scale mining in the community in order to win their votes during elections. This has resulted in the use of generators as a source of electricity for their mining activities and other domestic activities.

Also, the attitudes of these politicians have led to members in the community not trusting the government officials responsible for monitoring the activities of mining. Some of the interviewees explained that some miners operate without a license and nothing has been done to prevent them from operating. They were of the view that those engaged in illegal mining and some members of the state institutions were collaborators. Taking bribes and neglecting the fact that their activities are illegal and must be stopped. This has therefore increased their level of mistrust for these governmental institutions responsible for instilling discipline in the dealings and activities of mining.

Aside from identifying some of the members in the governmental institutions as corrupt, others also revealed that the District Assembly and the chief of the community accept gifts from the Chinese company which they believe are bribes in order to carry out their activities on small-scale mining of which they are not permitted to do.

Furthermore, on the part of security agencies, an expert explained that after the arrival of the Chinese company, there was a demonstration by the youth of the community to register their disapproval of the presence of foreign nationals in the community and the activities that were carried out in the community. This led to a clash between the two groups and in order to disperse the crowd, the Chinese company called upon the security agency to brutalize and arrest some of the youth involved in the demonstration. The expert further explained that the reasons for

which the security agency was able to brutalize the crowd was that the company had recruited these security personnel for their benefit.

He further explained that the appropriate channel for dealing with this issue was not to instigate the security agency to brutalize the crowd but to report to the appropriate committee for proper action to be taken against the youth of the community. The expert further revealed that there are established committees responsible for dealing with issues at both the district and regional levels known as the District Security Committee (DISEC) and the Regional Security Committee (REGSEC). The DISEC is made up of representatives from all the security agencies and the district authorities as a unit that resolves issues that threaten the peace of the district. Thus, the first point of contact was to inform DISEC of the intentions of the youth towards the Chinese company.

This confirms the fact that the actions of some of the security personnel was to receive economic benefits from these foreign nationals diminishing their judgment over unlawful acts. Corruption is not only an act of taking money or rendering favors to a person but also an inability of acting to prevent a negative course when necessary. According to Transparency International (2018), the corruption perception index scores for Ghana from 2015 to 2018 was from 47 to 41 indicating that the level of corruption continues to increase on a yearly basis. To buttress the point on how corrupt the governmental organizations and the security agencies were, a recent undercover activity undertaken by an investigative journalist, Anas Aremeyaw Anas dubbed ‘Galamsey Fraud’ which was released on the 27th of February 2019 revealed that there is a lot of bribery and corruption in the institutions responsible for preventing the activities of illegal mining in the country (Ghana Web, 2019a). During this investigation, a sum of GHC 40,000.00 was paid to government officials in order to skip some of the processes involved when obtaining a license to operate as a small-scale gold miner (Ghana Web, 2019b).

The corrupt nature of the institutions and security agencies has led to the small-scale mining sector been compromised and seen as a failure.

5.3.6 Dissemination of Information

The availability of information to the standard of the locals in the community was one of the challenges identified. It was observed during the interview that the majority of the interviewees did not have formal education. The dissemination of information regarding the ban on the

activities of small-scale mining was very poor and those involved in the illegal small-scale mining understood this ban in a different context. The majority were of the view that the ban did not apply to them since their activities were not close to water bodies as those in the southern part of Ghana but rather, they insisted that their mode of extracting the gold particles from underground was by digging. Therefore, they did not see the reason why they should not proceed with their activities.

Furthermore, an expert identified that on the aspect of dissemination of information on the issues related to mining activities, the use of notice boards as a medium to spread information has not been effective. He explained that before any major mining activity commences in a community, one of the requirements is to apply for a license to prospect a piece of land. When the Minister in charge signs the concession, it is displayed on the notice board of the District Assembly for 21 days. The purpose of this is to inform the general public of the intentions of a mining company in a particular community. It is also to ensure that those who are not in agreement with the proposed mining project of the company to submit a petition to the DCE against the project. Due to the inability of most of the community members to read English, the notice remains in the District assembly for the 21 days without any opposition. However, the opposition to the project begins when this company begins its activities in the community. On the other hand, those who have had little education are too busy with their mining activities in the community and do not have time to visit the District Assembly to read any information on the notice board. In this regard, communication and coordination between the community and the district assemble are not effective.

Based on the assumption of Gunn cited by Althaus et al. (2013), some of the perfect conditions for effective policy implementation is perfect communication and coordination as well as obedience. Lack of communication and coordination is as a result of improper dissemination of information. Information as one of the policy instruments is very important in steering the affairs of the mining sector. Therefore, there is the need to ensure that those who will be affected by an intended project must be given and must understand the information provided concerning them.

5.4. Influencing Factors

The third objective of the study was to identify the factors that influenced people's participation in illegal small-scale mining activities in the community chosen for this study. Interestingly, all those interviewed for this section had various responses and this will be discussed in the subsections below.

5.4.1 Unemployment

As discussed previously, small-scale mining serves as a source of employment for most people living in rural communities of which this community of study is not an exception. According to the interview, most of the interviewees expressed their views on the reason why they embraced the activities of small-scale mining as a source of employment. Many had no jobs and had to survive.

Firstly, the majority of the interviewees are involved in crop farming such as maize, rice, and millet. However, their farming activities are just during the rainy seasons. As discussed previously concerning the physical features of the district, the pattern of rainfall is unpredictable in the district and it changes from time to time. This is however not favorable for farming activities since the farmers have just three to four months within the year to farm. They spend the rest of the year being idle and unemployed. Therefore, they chose to mine as their secondary employment to keep them productive during the dry seasons.

The high rate of unemployment in the community has led to social vices which are in contradiction to the ethics of the society. An interviewee opined that his long-term unemployment status and his ability to survive led to his indulgence in highway robbery of market women and other travelers on the Bolgatanga -Tamale highway. However, he confirmed that, since he discovered that small-scale mining could become his primary source of survival, he decided to not get involved in the activities of robbery but mine gold.

Other interviewee blamed the preference of university graduates over technical institution graduates for various job opportunities offered by the government as a contributing factor. Their desire to be part of the workforce in the country has proven futile since the knowledge they acquired to help the technical industries of the country has not been put to use rendering them unemployed.

5.4.2 High Family Dependence

During the interviews, males were identified as the main gender involved in small-scale and illegal small-scale mining. The main reason is that males are identified as the main gender responsible for providing for the family. They are identified as the head of the family and with the responsibility for taking care of their immediate nuclear family and the extended family. The dependence on the family head ranges from the provision of shelter, food, and clothing to the paying of school fees for basic education and the necessary supplies needed for school. In order to perform this role, they need to find a source of income to be able to support their families and the closest and highly available is illegal small-scale mining aside farming.

Also, the dependence of the family does not only require that the individual is the head but has the financial means to support any member of the family. Family sometimes depend on the wealthiest for their basic support.

A few of the interviews expressed the roles they play in their family and revealed that they had more than 25 people depending on them for support. Due to high family dependence, some of the interviewees explained why they are involved in the activities of small-scale mining.

“... this is my most cherished means of income. As my income support system, I can support my family. The life of my mum is dependent on me. With her current medical situation, it has become my responsibility to take care of her medical bills. Even though we have a health insurance system, not all medical issues are covered by this system. The medical system in the country also requires that medical expenses must be paid before any patient can be rendered any medical service. This is my greatest responsible which I have to fulfill and the only job that is available, promising and very productive is being involved in the activities of small-scale mining” (FEF).

5.4.3 Poverty

One of the factors that have led to the increased activity of illegal small-scale mining is poverty. The interviews during the study revealed that all those involved in the activity earned their source of livelihood from the operations of mining to be able to provide food and shelter for their families. The nature of the houses in which the majority of community members reside in revealed it all. An individual who is not able to meet the basic necessities of life such as food, clothing, and shelter is living in chronic poverty (Shepherd, 2007). In the long round, poverty

does result in the inability of an individual to give their children the proper education they need, accumulated wealth for future support and attain a stable economic life (Carter et al., 2007).

Havnevik et al. (2015) are of the view that the unprogressive nature of the agricultural sector and less development of rural areas are all factors that lead to poverty. It was revealed from the interviews that the existence of poverty in the community is as a result of the farmers' inability to transport harvested food crops from the rural area to the city for sale due to the poor nature of the roads, less availability of transport system, and lack of available storage facilities for harvested crops. This results in farmers not being able to gain from their products and their inability to pay for some of the loans borrowed from banks. To avoid what they believe to be unnecessary debts, illegal small-scale mining was their best option.

It must also be noted that the presence of poverty in this community is as a result of insufficient availability to economic services such as loans and insurance to be able to improve the financial activities in the community. Some of the interviewees explained that the nature of the community has contributed to access to little or no economic services. As explained by Havnevik et al. (2015), the prevalent nature of poverty is as a result of the lack of economic and political structures instituted in the country to assist rural communities.

5.4.4 Earnings from Mining

Earnings from mining refer to the amount of money earned from the activities of illegal small-scale mining. During the interviews, it was observed that there was a different set of people who were involved in the mining business. The position they held determined the amount of their earnings. The category included landowners, concession owners, and workers of concession owners. Majority of those interviewed were workers of concession owners. Only a few were landowners and concession owners. An interviewee explained that the land he was working on had been rented to him for a regular fee from the earnings of his activities. And since his earnings are more than he has always expected therefore he is able to pay off his landlord without any difficulty.

Other interviewees also revealed that the lavish lifestyle of those involved in small-scale mining drew them to the trade. Similarly, others complained that the earning they make from mining as compare to crop farming is high and therefore, their preferred choice of employment was to

engage in illegal small-scale mining. Furthermore, their earning was not taxable since their activities were illegal.

Affirmatively, others such as non-small-scale miners also benefit from the earning of those involved in illegal mining. Those non-small-scale miners interviewed rendered services such as food vending, barbering, fashion designing, and hairdressing. They explained that based on the earning that they make from the sale of their products or the services they render in the community, they are able to provide for their families even though they are not involved in illegal small-scale mining in the community.

The earning from illegal small-scale mining is very attractive explained by an interviewee. On a regular day, earnings are between 50 to 100 Ghana cedis. On special days, earnings are between 200 to 500 Ghana cedis and on some days, examples, when there are no activities, little to nothing is earned.

5.4.5 Dysfunctional Institutions

The dysfunctional institution ranges from the delay in license processes to law enforcement. The acquisition of licenses for small-scale mining was first introduced in the Small-Scale Mining Law of 1989 (PNDCL 218) (Government of Ghana, 1989c). However, this law was merged into the new Mining and Mineral Act of 2006 (Act 703) which enabled the small-scale miner to acquire a license from the MC to mine (Engels & Dietz, 2017). Unfortunately, license processing has become difficult, expensive, bureaucratic and time-consuming. Some of the interviewees complained that most of them have waited 6 months to 5 years and have still not received their license. Others also complained that the bureaucratic nature of permit acquisitions is too long. An expert explained that license acquisition involves different institutions such as the MC, EPA, District Assembly and the Ministry of Lands and Natural Resources for an effective mining operation. The MC at the regional level issues the form to initiate the application process. When the necessary documents are attached, it is then published at the District Assembly for 21 days after which EPA issues an environmental permit. After a thorough checking of the submitted application and the required documents at the regional office of the MC, the documents are then forwarded to the national office of the MC in the capital city of the country for further verifications and to the court for registration before it is finally transferred to the Ministry of Lands and Natural Resources for the signature of the

minister in charge. According to the law, the processing time required for permit acquisition for small-scale mining is 90 days and the only person responsible for issuing out license is the minister in charge. In the absence of the minister in charge, no one else can issue out these licenses. This has therefore resulted in a situation where people have waited more than 90 days to acquire their small-scale license while others who could not wait any longer engage in small-scale mining illegally.

The other issue is law enforcement. One of the factors that contribute to the activities of illegal small-scale mining is the absence of effective law enforcement in the community. During the interview, it was deduced that the majority of those involved in small-scale mining operated illegally. Even though there was a ban on small-scale mining activities in the country at the time of the interview, those in the community continued to mine paying no attention to the ban. Their operations were not in secret in the full glare of the public making the community members assume their activities were legal. To emphasize further, an interviewee explained that even though he is a licensed small-scale miner the law did not permit him to work since there was a ban on all activities of small-scale mining and therefore all should adhere to it.

The activities of small-scale mining are mostly found in the rural communities likewise the activities of illegal small-scale mining. Police officers were heavily present in the regional capital, but it was observed that there was no single police presence in the community to ensure that people did not carry out operations on mining.

6 CONCLUSION AND RECOMMENDATIONS

6.1 General Conclusions

The aim of this study was to identify the challenges in the implementation of policies on small-scale gold mining through a case study of Gbane, a mining community located in the Talensi District in the Upper East Region of Ghana. The various objectives to achieve this aim was to review the policies and laws regarding small-scale mining in Ghana; to investigate the challenges opposing the implementation of policies and laws on small-scale mining in Gbane, and to examine the factors that influence people's participation in illegal small-scale mining activities in Gbane.

Based on the data collected, after the discovery of gold in the district in the 90s, small-scale mining has existed in Gbane for almost 30 years of which majority of these activities are illegal. The study also revealed that one of the challenges that opposed the implementation of policies and laws on small-scale mining was land-use conflicts. Also, the presence of foreign nationals involved in the activities of small-scale mining under the pretense of rendering services for small-scale miners. Again, inadequate economic and human resources to support the institutions responsible for monitoring small-scale mining activities is a major factor. This hinders the effective implementation of the laws and policies since the main institutions responsible for monitoring the affairs of small-scale mining are not well equipped. Furthermore, the unrealistic penalty system of punishing offenders in the mining sector does not deter others from getting involved leading to ineffective law and policy implementation. Again, the corrupt nature of some of the officials of the government, chief, the security agencies and some members of the District Assembly in taking bribes to permit and support the activities of foreign nationals into the small-scale mining sector, which is mainly reserved for Ghanaians, is a major contributing factor to ineffective policy and law implementation on small-scale mining.

In terms of factors that influence people's participation in illegal small-scale mining activities, unemployment was one of the main factors that influenced the activities of illegal mining in the community since most of the youth did not have any other jobs that will employ them. Therefore, they rely on small-scale mining which serves as a source of employment for them. Also, the high dependence of family members on a single member for all their needs. Other factors include poverty among community members serving as a source of income for the majority of those living in the community; earning from the activities of mining as it enables parents to cater for the needs

of the family by providing food, clothing, shelter, as well as paying of school fees and the lifestyle of those in the business of small-scale mining draws people as well; and dysfunctional institutions in terms of long processing of permits are the other factors that influence people's participation in illegal activities.

Finally, various definitions on institutions and environmental policy instruments were defined to set as a foundation for the thesis. In this regard, Vatn's external sanctions and Scott's regulative structures encompass the formulation of rules and regulations to monitor the behavior of people as well as evaluate the effectiveness of the instituted rule and regulations. The final sanction is to institute reward or punishment of the actions of the people. In the case of illegal activities in the small-scale mining sector in Ghana, the instituted rules and regulations which is also a policy instrument does not deter others from engaging into such activities.

6.2 Recommendations

For an effective functionalization of laws and policies on small-scale mining and the minimization and eradication of the activities of illegal small-scale mining, the study makes the following recommendations.

- i. The government must work towards the eradication of poverty by creating more jobs in the rural communities through the development of skills and career centers to train the youth to help support livelihoods in the community in a long term.
- ii. The institutions responsible for monitoring the activities of mining must be equipped with the necessary financial and human resources.
- iii. Laws and policies must be translated into local languages for the locals to have an in-depth understanding of the laws concerning the mining activities in the areas. Even though the official language of the country is English, not everyone can read, write and understand.
- iv. The Minister responsible for approving and issuing of permits should delegate Ministers in charge of the various regions to issue permits in order to reduce the delays and costs incurred in acquiring a license for small-scale mining.
- v. The government must equip the MC and the EPA to tune the mindset of citizens through sensitizing and educating the local communities on the effects of illegal activities on the environment and the lives of humans at large since the penalty system does not deter others from engaging into the activities of illegal small-scale mining,

- vi. I would like to recommend the continuation of further research in eradicating the activities on illegal small-scale mining in Ghana and the world at large.

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APPENDIX
INTERVIEW GUIDES
UNIVERSITY OF EASTERN FINLAND
DEPARTMENT OF HISTORICAL AND GEOGRAPHICAL STUDIES

TOPIC: *Challenges in Implementation of Policies on Small-Scale Mining – The Case of Gbane*

INTERVIEW GUIDE FOR SMALL-SCALE MINERS

1. ID
2. Gender: A. Male [] B. Female []
3. Age
4. Educational Background: A. Primary [] B. Secondary [] C. HND [] D. HND/BSc [] E. MSc [] F. No formal education []
5. Marital Status: A. Single [] B. Married [] C. Divorced [] D. Widowed [] F. Separated []
6. Residency: A. Migrant [] B. Non-migrant []
7. How long have you been living in the community?
8. Household size (number of people)
9. How many of the family members are living in / depending on the family head?
10. Number of children (less than 15 years)
11. What different activity do you do (as a source income)?
12. Why did you change your activity?.....
13. How long have you been doing small-scale mining?
14. What are some of the reasons for engaging in small-scale mining?.....
15. How many mining locations do you use?
16. What type of labour do you use in the mining activities?
17. What method(s) of extraction is used for mining?

UNIVERSITY OF EASTERN FINLAND

DEPARTMENT OF HISTORICAL AND GEOGRAPHICAL STUDIES

TOPIC: *Challenges in Implementation of Policies on Small-Scale Mining – The Case of Gbane*

INTERVIEW GUIDE FOR NON- SMALL-SCALE MINERS

1. ID
2. Gender: A. Male [] B. Female []
3. Age
4. Educational Background: A. Primary [] B. Secondary [] C. HND [] D. HND/BSc [] E. MSc [] F. No formal education []
5. Marital Status: A. Single [] B. Married [] C. Divorced [] D. Widowed [] F. Separated []
6. Residency: A. Migrant [] B. Non-migrant []

Effects

7. Do you have any idea about mining activities in your community?
8. Have you ever been affected by the activities of small-scale mining?
9. If yes, in what ways have you been affect?
10. If no, do you know of anyone who has been affected by the activities of small-scale mining?

Efforts to address the problem

11. Do you consider the activities of the small-scale mining to be illegal?
12. If yes, what have you done to address the issue of illegal small-scale mining in the community?
13. Are there other people or organizations that are addressing the issue of illegal small-scale mining in the community?
14. Are there any NGO's that support the activities small-scale mining in the community?
15. Overall, what would you say about the outcome of mineral finds in the community, taking into consideration the benefits and the losses from the effects?
16. On the whole, what do you propose could be the solution to end illegal small-scale mining in the community?

Conflicts

17. Are there any conflicts between small-scale miner, non-small-scale miner, NGO's and government agencies?
18. What do you think is the main cause of conflicts between these groups of people?

UNIVERSITY OF EASTERN FINLAND

DEPARTMENT OF HISTORICAL AND GEOGRAPHICAL STUDIES

TOPIC: *Challenges in Implementation of Policies on Small-Scale Mining – The Case of Gbane*

INTERVIEW GUIDE FOR REPRESENTATIVES OF THE GOVERNMENTAL AGENCIES

1. What do you think are the key reasons and needs of those involved in small-scale mining?
2. The mineral policy document is said to be a drafted one, therefore, I would like to ask if it is being used even though it is a drafted one.
3. How is the mineral policy implemented?
4. How effective is this policy?
5. What are some of the challenges for the implementation of this policy?
6. Comparing the situation of illegal small-scale mining, would you consider the situation more or less after the implementation of the policy?
7. What are some of the key reasons that the practice persists?
8. What do you think is needed to be done to further curb the practice?
9. Has the practice increased or decreased in the last decade? If yes.....why?
10. Are there always conflicts between small-scale miners, large-scale miners, the governmental agencies and NGO's? If Yes.....
11. How are conflicts resolved between these groups?